COTTON

MARCH, SERVING THE 1943

Textile Industries

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Speaking of SABOTAGE

. . . The traitorous hand that tosses a monkey wrench into the machinery is not the only one that slows up production.

The unseen saboteurs of production are more frequently accidents and sickness, taking enormous tolls today in American industry, despite health and safety measures. Such steps, of course, are all-important.

But Employers should not overlook the "self-help" which Employees can receive through a plan that makes competent medical attention possible when accidents or sickness strike, often restoring them to the production lines with a minimum of lost time.

Now operating in many hundreds of plants, a Provident HUMAN SECURITY plan of group disability protection, gives Employees financial aid when disabilities strike, helping them meet such emergencies as →

HUMAN SECURITY

- Death in family
- Loss of time due to Sickness or Accident
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee
- Maternity benefits

EMERGENCY INCOME

May we discuss with you the benefits of such a plan to Employers and Employees alike?

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY
CHATTANOOGA - Since 1887 - TENNESSEE

• Specialists in HUMAN SECURITY (Emergency Income) Plans for over a Half-century •

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Standard U. S. Marine Corps Emblem.

WE SALUTE THE U. S. MARINES

. . . and the American manufacturers whose skill and effort provides them with the world's best equipment.

BUY U. S. WAR BONDS

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TWO PARK AVENUE, NEW YORK

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Volume 107 Number 3

Are You Thinking About Buying New Looms?

Why Not?

This War Will End Sometime and You'll Need New Looms

You are running your looms to capacity — on three shifts a day — under working and help conditions that will leave them far from efficient

There are new High Speed and High Quality Looms of far greater productive capacity than most of those you now have

You will want them — in fact you will Have to Have them to stay in the game — after the War

Why not Start Buying them — NOW — while it is Easy — on Your Own Installment Plan — setting aside periodically some of your surplus earnings in a Capital Reserve in Cash for New Looms?

Keep a Reserve in Cash

You'll Need It

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia Spartanburg S C

Full-fashioned knitting machines. Despite moist air and wetted yarn, needles can be fully protected against rusting by *Texaco White Needle Oil B.*

More Accurate *Knitting*

YOUR *present* knitting machines will produce more accurately formed stitches, course after course, when both needles and machines are lubricated with *Texaco.*

Texaco White Needle Oil B maintains the original highly polished surface on needles even after long, hard service. It resists oxidation and gum formation; keeps needles, sinkers, etc., *clean.* Disappears completely in the boil-off.

For preventing that reddish deposit which you see exuding from oscillating bearings of full-fashioned knitting machines, and for their general lubrication, use *Texaco Cepheus Oil C.*

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent mills in every textile area.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

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★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

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TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Through the Gateway to the South

from our plant at Charleston, West Virginia, WESTVACO TEXTILE-GRADE CAUSTIC SODA is being speeded to an ever-increasing number of Southern mills and bleacheries.

Uniform in analysis, car after car, WESTVACO TEXTILE-GRADE CAUSTIC SODA gives excellent, low-cost results in wet processing.

Throughout 1943 we confidently expect to continue to provide Westvaco caustic soda users in the Southern Textile Industry with their full requirements, both as to quality and quantity.

Westvaco Textile-Grade Caustic Soda

Uniformly High Quality from
a Conveniently Nearby Source

Liquid · Flake · Solid

WESTVACO CHLORINE PRODUCTS CORP.
Chrysler Building, New York, N. Y.
Woodside Building, Greenville, S. C.
Chicago, Ill., Newark, Calif.

Westvaco
CHEMICALS

NOBODY ever wore a piece of yarn — or just wrapped a length of cloth around her body. Yarn has to be made into something — so does cloth. Then it becomes something useable, wearable, buyable and sellable.

You and your company are performing one or the other of these functions. We are simply suppliers of the materials. So isn't it only good sense, as well as good business, for us to "look over your shoulder" and see what problems *you* have?

If rayon yarn hadn't given some trouble in not being absolutely uniform—if knots and broken filaments hadn't slowed production, created "seconds", cost money, probably our "Continuous Process" would never have come along. It took us seven long years and millions of dollars to produce it—a yarn made "continuously", as a single thread, untouched by human hands from spinning to twisting. That yarn is a revelation in uniformity, and knots and broken filaments are virtually absent.

Or take underwear. If we hadn't seen that early rayon underwear cloth was on the sleazy side, poor in wear, unsatisfactory to wash, probably Spun-lo Knit Cloth would not have come along—an underwear fabric, just as uniform yard by yard as "Continuous Process" yarn is, pound by pound. And undies from it feel right, handle well, are dainty and, at the same time, wear like iron, and wash as simply as a handkerchief.

We think it has paid dividends for Industrial to know you and your problems. For one thing, it has made a product of Industrial mean "something better" to everyone all along the line—and that means sales and satisfied customers for you as well as for us.

"MIND IF WE LOOK OVER YOUR SHOULDER?"

Industrial RAYON CORPORATION

CLEVELAND, OHIO
New York Office, 500 Fifth Ave.

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34

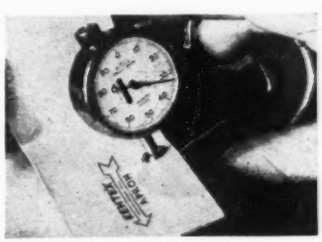
KENTEX

TRADE-MARK REG.

APRON

. . . A NEW NAME FOR AN OLD STANDBY

You can now recognize our Textile Aprons at a glance — for they will be stamped with the KENTEX Arrow Trade-mark shown above. The name KENTEX will be your assurance of dependable quality, durability, and sure-fit you have learned to expect in long-draft aprons made by this company.



We are proud of our aprons. We know they will *stand up* and help you secure maximum production from your spinning frames. Therefore, we wish you to be able to readily identify the aprons that *do* give you *superior* service. That's why we are branding them KENTEX textile aprons.

Textile Apron Company

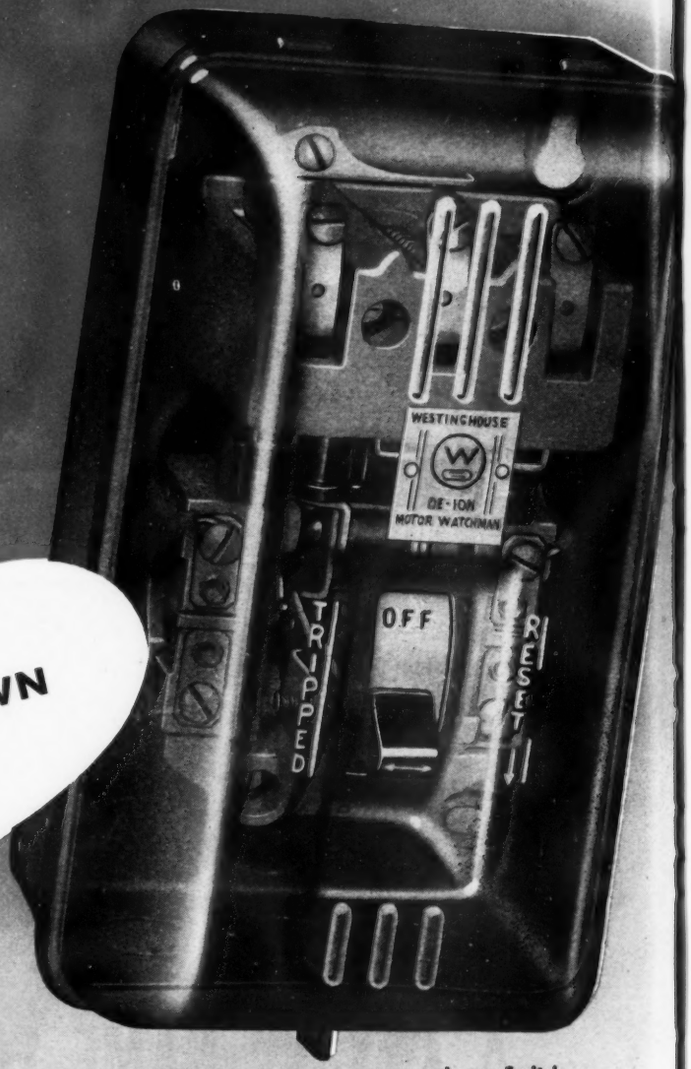
East Point, Georgia

HERE'S WHY

QUICK-MAKE QUICK-BREAK

HELPS KEEP

PRODUCTION up... maintenance DOWN

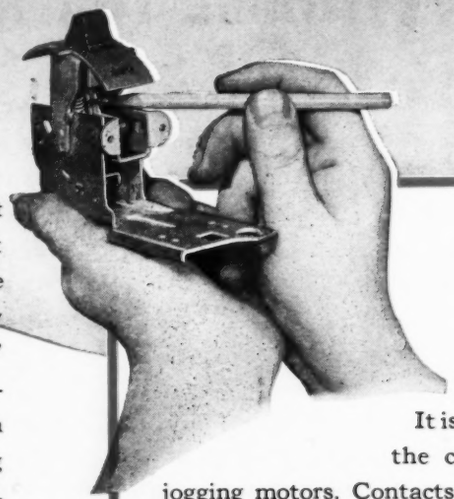


Loom Switch
Class 10-100, Size 1

Westinghouse "De-ion" Loom Switches for a-c Motors up to 7½ hp.

Quick-break action alone in a motor starter is not enough. For long uninterrupted life, it is important to have quick-make action, too. Westinghouse "De-ion" Loom Switches have both. No matter how slowly the toggle switch handle is raised to the "ON" position, as soon as it passes center, the positive-acting mechanism instantly exerts full pressure on the contacts. There is no chance of contacts carrying the full starting load before they are latched together tightly. This two-way protection against arcing minimizes pitting and burning, increases contact life. For complete information, write for descriptive folder. Address Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., Dept. 7-N.

J-21201



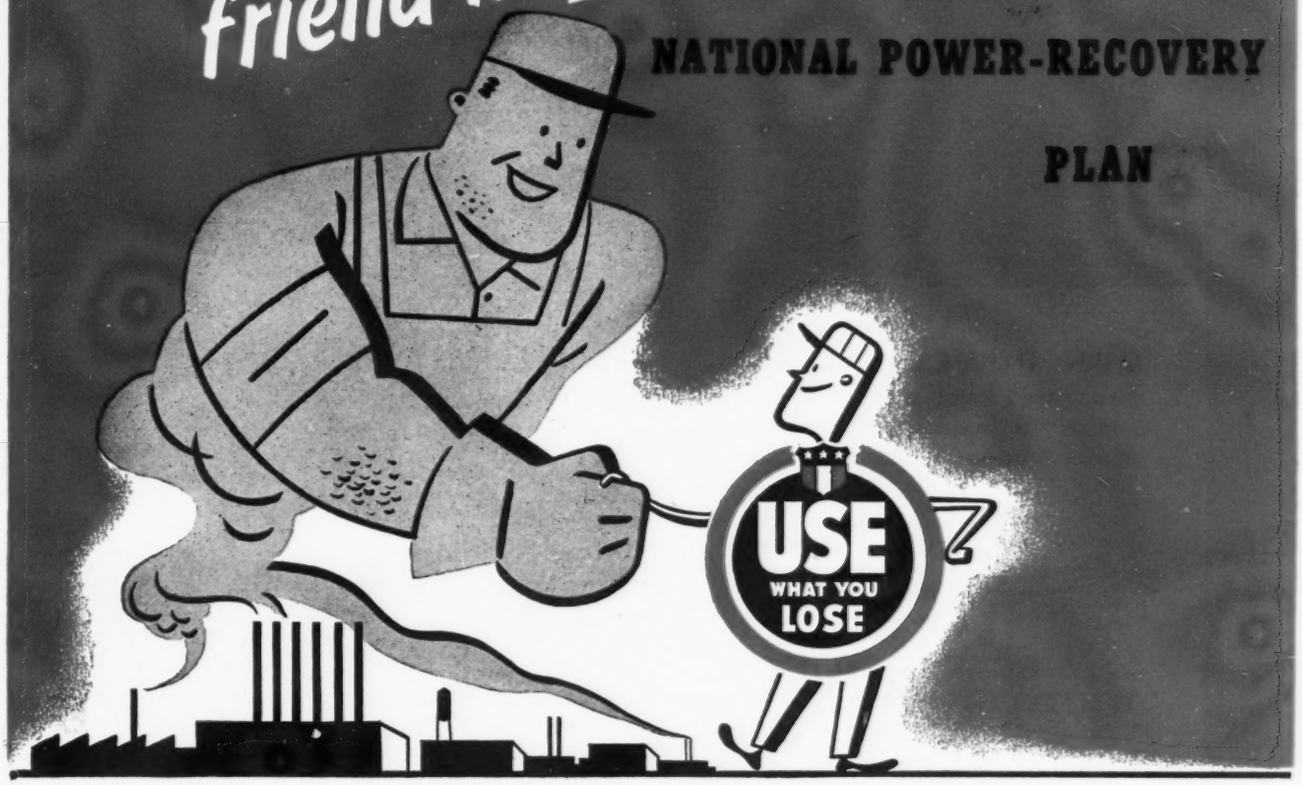
SPRING ACTION PREVENTS "TEASING"

It is impossible to "tease" the contacts, even when jogging motors. Contacts cannot be held partially closed. Two heavy steel springs which are under a constant 20-pound tension, give the positive quick-make quick-break action.

Westinghouse

Industry's friend in need

THE Gilmer NATIONAL POWER-RECOVERY PLAN



Now, when Industry needs it most, the Gilmer National Power-Recovery Plan steps forward to increase available power by cutting down on power-waste. Practical Power-Recovery Estimators do the job . . . skillfully designed to meet the needs of these services: Electricity, Gas, Water, Steam, Mechanical Transmission, Compressed Air, Refrigeration, Boilers, and Prime Movers.

"*Two Boulder Dams Worth of Power*" are made available through the Gilmer Plan. If you want your share, then now is the time to put it to work. There's bound to be a spot in your plant where the FREE Gilmer Booklet and Charts can effect important and needed savings. Write to Gilmer today . . . no cost or obligation for this plan.

"This type of work is a genuine contribution to the war effort," Hoffman Beverage Company; "You have done a fine piece of work . . . made a substantial contribution to Power Conservation," Texas Power & Light Co.; "We feel this is a very good thing," The Celotex Corporation; "Want to congratulate you upon your National Power-Recovery Plan," Leeds & Northrup; "Well explained in the booklet," Johnson & Johnson.

AND HERE'S ADDED HELP FOR BELT PROBLEMS:

To help you choose the correct Gilmer Belt for every purpose, we offer the Gilmer Handy Belt Selector. It solves your needs at a glance, whether for V-Belts, Flat Belting, Round Endless Belts, Belts for Textile Machinery, or for special purposes. Write for it . . . *today.*

Gilmer BELTS

L. H. GILMER COMPANY
TACONY, PHILADELPHIA, PA.
The Oldest Firm of Rubber Belt Specialists

L. H. GILMER COMPANY
Tacony, Philadelphia, Pa.

Gentlemen: Please send me, without cost or obligation:

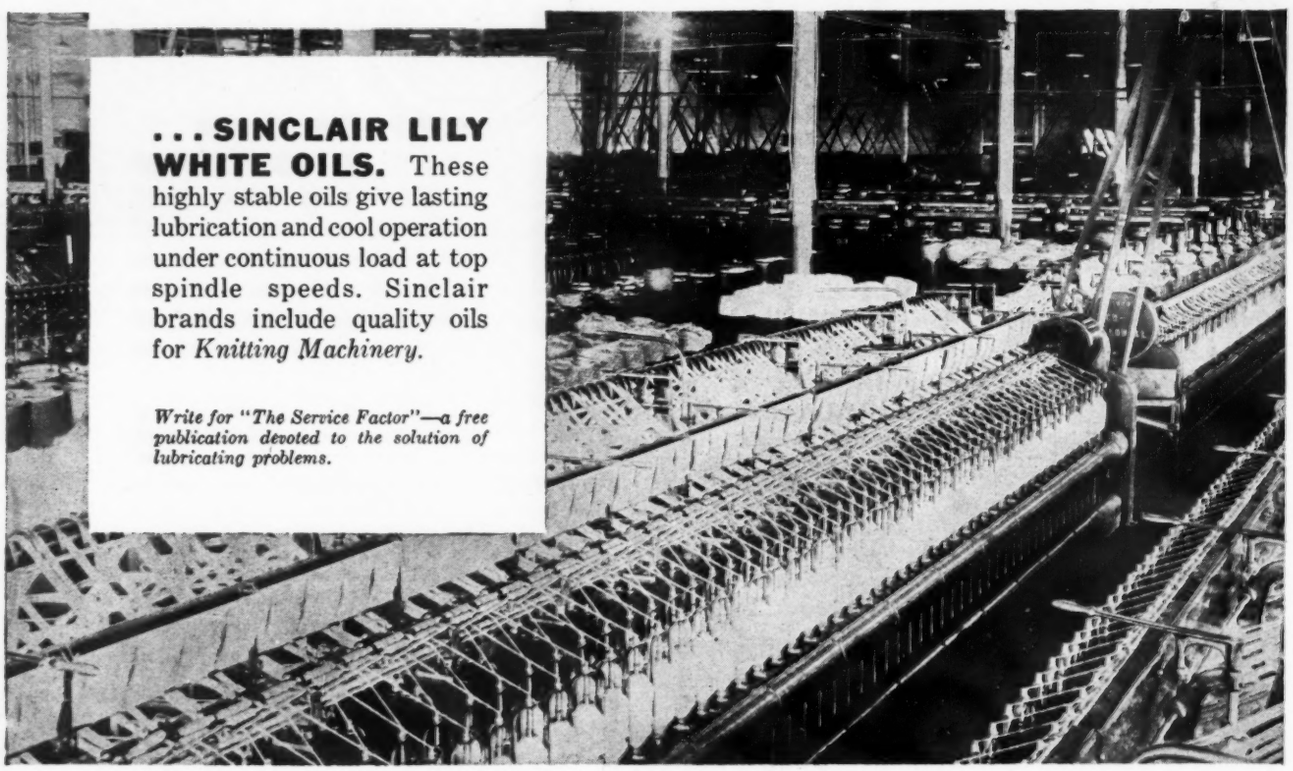
☐ The Gilmer National Power-Recovery Plan
☐ The Gilmer Handy Belt Selector

NAME & TITLE _____

COMPANY _____

ADDRESS _____

GUN POWER needs manpower — and *productive* power. To maintain peak production in *TEXTILE MILLS* use . . .



. . . SINCLAIR LILY WHITE OILS. These highly stable oils give lasting lubrication and cool operation under continuous load at top spindle speeds. Sinclair brands include quality oils for *Knitting Machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

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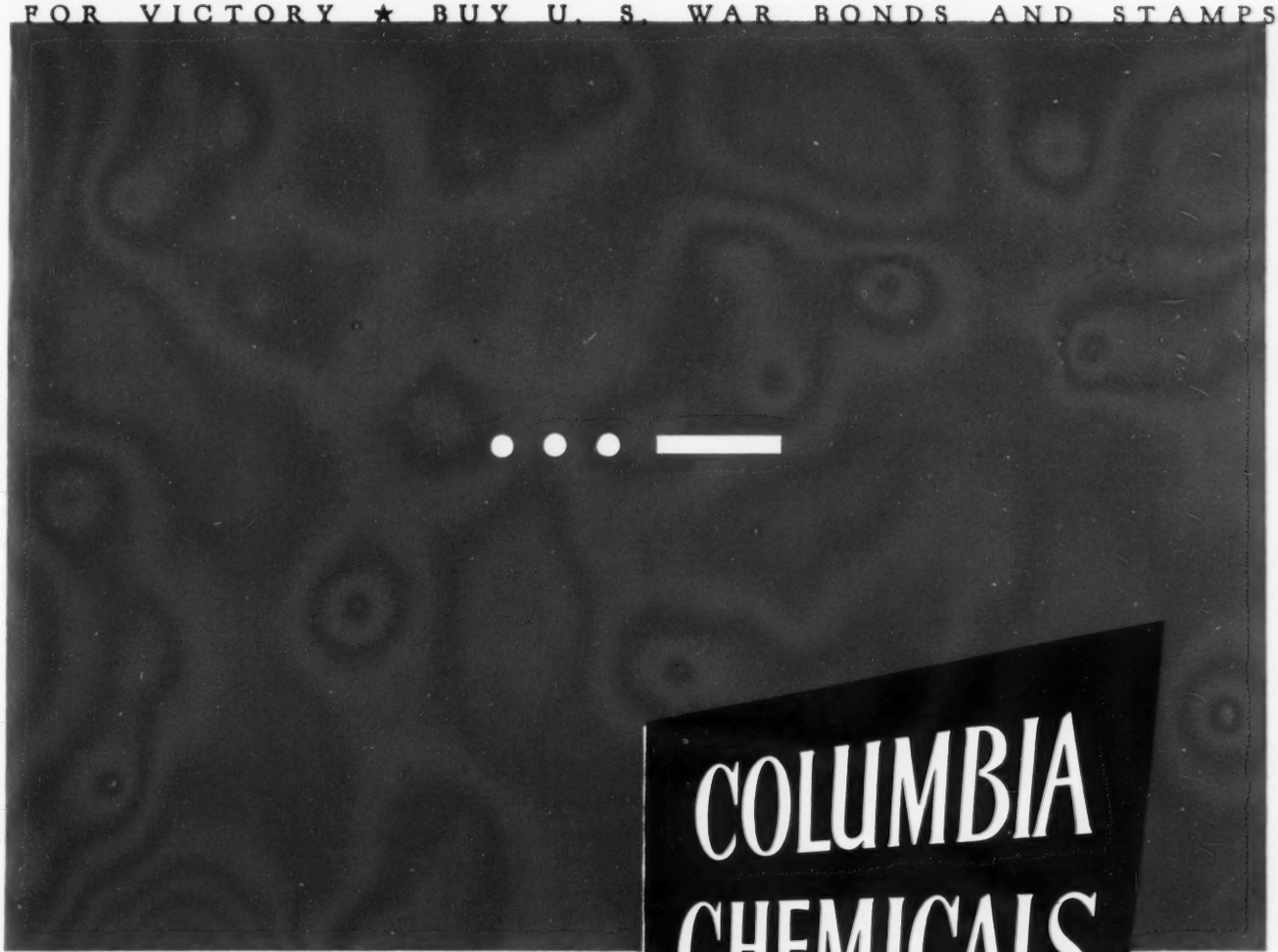


For victory!

Victory—complete victory, at the earliest possible moment! Nothing short of that will satisfy American Industry.

That's why the tempo of industrial production has increased so rapidly. That's why new production records are so commonplace today they scarcely merit a moment's attention. That's why supplies and equipment for our armed forces are pouring out of our factories in a veritable deluge—a deluge which will inevitably overwhelm our enemies.

In this war production program, Columbia Chemicals are playing a vitally important role, helping to increase production, helping to make sure that finished products will provide the dependable performance so necessary in all types of war equipment.

If the pressure of expanded wartime schedules has created a production problem in your plant, involving the use of chemicals such as those listed here, why not let us discuss it with you on the chance that we might be able to make a suggestion or two which will be of benefit.

COLUMBIA Essential Industrial CHEMICALS

SODA ASH · CAUSTIC SODA · SODIUM BICARBONATE · LIQUID CHLORINE · SILENE* · CALCIUM CHLORIDE
SODA BRIQUETTES · MODIFIED SODAS · CAUSTIC ASH · PHOSFLAKE · CALCENE** · CALCIUM HYPOCHLORITE

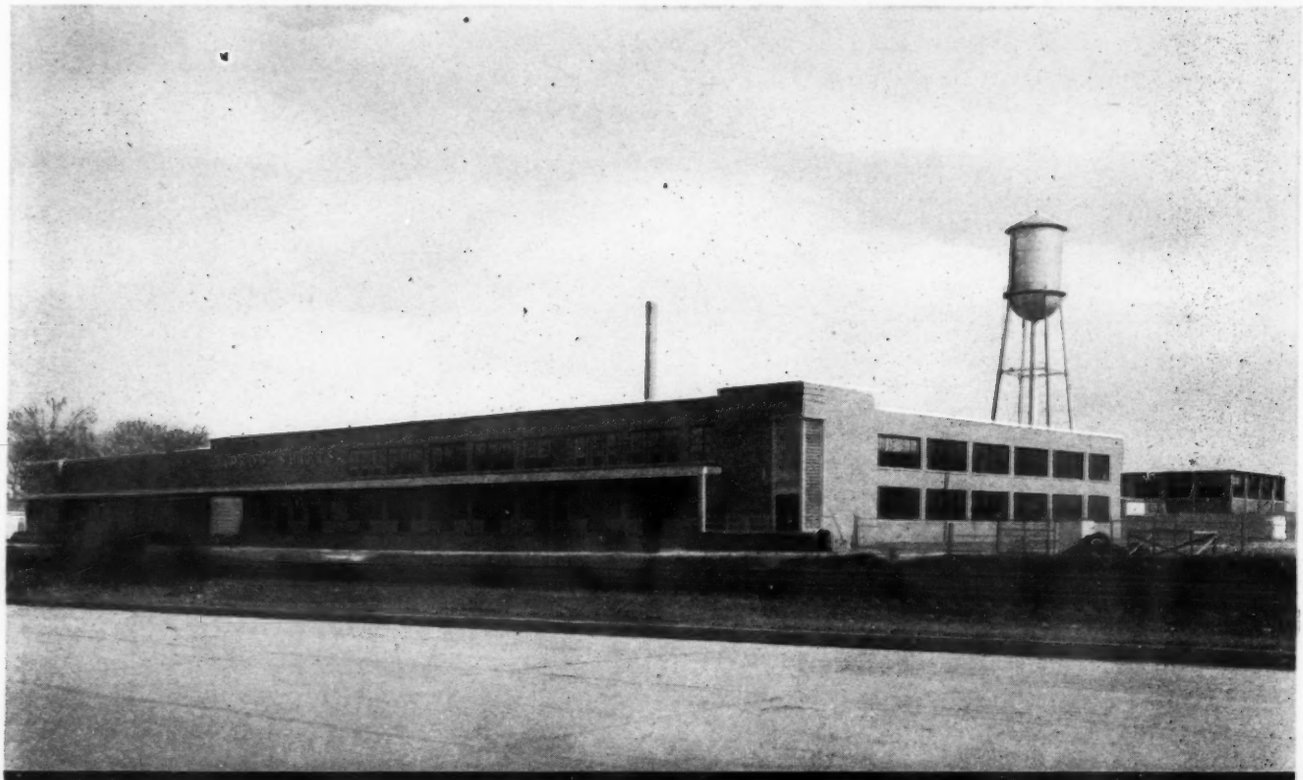
*Precipitated Calcium Silicate **Precipitated Calcium Carbonate

PITTSBURGH PLATE GLASS COMPANY

COLUMBIA CHEMICAL DIVISION

GRANT BUILDING · PITTSBURGH, PA.

CHICAGO · BOSTON · ST. LOUIS · PITTSBURGH · NEW YORK · CINCINNATI · CLEVELAND · PHILADELPHIA · MINNEAPOLIS · CHARLOTTE



OFFICE, PACKING AND SHIPPING BUILDING OF THE ATLANTA ARROW SHIRT PLANT OF CLUETT, PEABODY & CO., INC.

Cluett, Peabody & Company acquired their first Atlanta property in 1931, and immediately selected Robert and Company to enlarge the original building. As the volume of this plant has grown, Robert and Company's services have been employed to plan and supervise new construction. Our latest job for this client is the building illustrated above.

Robert and Company is prepared to handle all types of architectural and engineering projects — from simple remodeling jobs to great war plants and military and naval installations. In wartime planning and construction now, and in the expansion and readjustment of industry which the peace will bring, Robert and Company's staff offers complete, economical service.

ROBERT AND COMPANY
INCORPORATED

Architects and Engineers

NEW YORK • ATLANTA • WASHINGTON

THIS IS NO. 38 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

CONTROL OF TENSION AND PRESSURE FOR PINEAPPLE CONES OF HOSIERY-TWIST RAYON

When winding hosiery-twist rayon yarn on the No. 50 machine with Pineapple Cone Attachment and Roller Bail, the proper control of both tension on the yarn and pressure against the package, will help to produce cones of the desired shape and density.

At the start of winding, the amount of tension and pressure should be enough to build a firm foundation of yarn that will withstand the crushing effect of the outer layers. This tension and pressure will be gradually lessened, as the package diameter increases, through the differential adjustments.

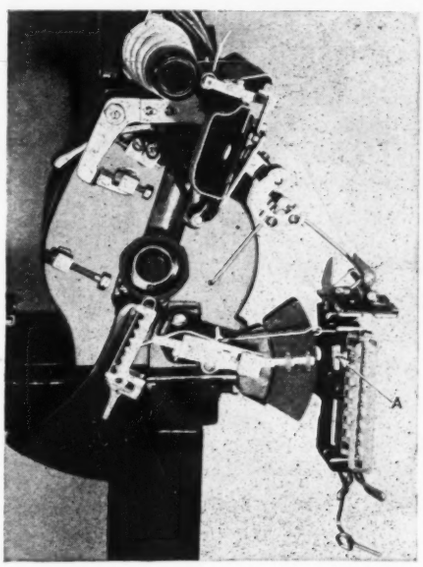


Fig. 1

The amount of applied tension will vary to some extent according to the denier of the yarn, the number of turns of twist, and the type of supply.

During recent months, we have experimented, in our own winding room, with sample lots of viscose rayon hosiery yarns. The following data, obtained from those tests, may be helpful to other mills in determining the proper controls for their conditions:

Cone Diameter	*Yarn Denier*	*Tension Weight*	*Pressure Weights*	*Measured Tension at Start*	*Measured Tension at Finish*
4½″	150	50-124X	50-128CX&128DX	approx. 25 grams	8-12 grams
4½″	100	50-138ACAX*	50-128CX&128DX	approx. 22 grams	7-11 grams
4½″	75	50-138ACAX	50-128CX&128DX	approx. 18 grams	6- 9 grams
4½″	50	50-138ACAX	50-128CX&128DX	approx. 14 grams	5- 7 grams

**Part 50-138ACAX is a balance weight positioned on the Differential Tension Lever so as to offset some of the weight of the Lever itself. It is used when winding rayon yarns of 100 denier and finer, which require a lighter tension than is obtainable with the standard weight.*

A little experimenting will determine where the tension weight should be positioned on the Differential Tension Lever, but it is not necessary to wind a full cone in order to find out the applied tension at the finishing diameter. First, the tensometer is used to check the initial tension with the Traverse Frame Back and Roller Bail in position against the empty cone (Fig. 1); then the Traverse Frame Back is pulled away from the cone to approximately the same position it would be in for cone of maximum diameter (Fig. 2), and the tension is checked again.

It is important to remember that excessive tension on the yarn should be reduced by changing the tension weight, not by adjusting the Tension Stop (A) on the Anti-Wear Tension. The purpose of this Stop is to keep the movable grid from passing too far through the fingers of the stationary grid. It should be set—with the yarn running at the start of winding—so that it *almost* touches the finger on the movable grid. It should never actually touch for fear of destroying the differential feature; if it should touch, the release of tension through the Differential Tension Lever would not take effect until after a considerable portion of the package had been wound.

The position of the Differential Pressure Connecting Rod in the Differential Pressure Adjuster may vary according to the diameter of the full cone. For a cone with 4½″ maximum diameter, the recommended position for the connecting Rod is in the 5th hole from the top. If the maximum diameter is less than 4½″, it may be necessary to locate the Rod in the 6th or 7th hole from the top in order to obtain sufficient release of tension.

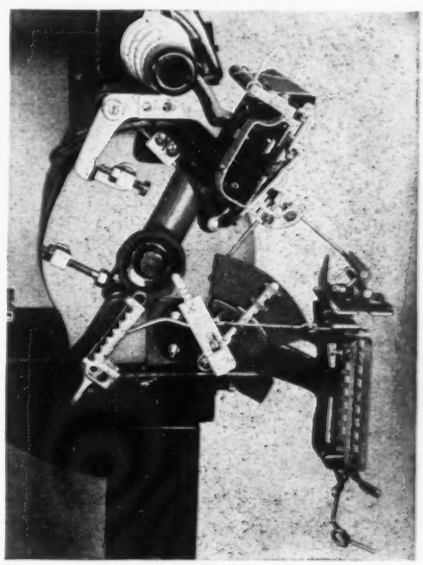


Fig. 2

Other Rayon Yarns

For acetate, cuprammonium and similar rayon yarns, the same tension and pressure weights are used. However, somewhat less tension is desirable at the start of a new cone, so the position of the weight on the Tension Lever should be adjusted accordingly.

See our Catalog in TEXTILE YEARBOOK
43-GMW-38

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U.S. Pat. Off.

WE FOUND *right in*

A WARTIME MESSAGE *that gives new meaning to the old adage* "A STITCH IN TIME"

the WHY and HOW of conserving RAYON

MORE RAYON is being produced than ever before! Yet rayon must be conserved—because it has become increasingly *important for war uses*...for 'chutes, uniforms, bomber tires, bullet-proof airplane tanks. And in addition many of the basic ingredients of rayon are now also used in making vital materials of war.

So, you see, rayon can help us win this war!

And how can you—and thousands of other women—make your rayons last longer and wear better? By taking better care of the rayon you have. By remembering that your "stitch in time" may be a small—but absolutely essential—part of winning this war. To refresh your memory, here is a handy list of hints on expert rayon care.

Smart **BUYING** *comes first...*

1. Plan ahead...don't wait until your buying becomes an urgent necessity. Take a little extra time to compare not only prices, but quality. In general, the closer the weave or knit, the more durable the fabric. Hems should be ample, seams wide and finished off to prevent raveling, stitches close and regular.

2. Look for The Label on everything you buy. Is the fabric washable? Is "dry cleaning only" recommended? Whichever is the case, let the label guide you when the time comes for a trip to the laundry or dry cleaner. Learn the various types of rayon, acetate, viscose and cuprammonium, and their characteristics and care.

3. Buy your correct size...always try on the garment. Remember it's easy to take a tuck where necessary, but there's no remedy for a slip or dress bursting at the seams. See that the garment fits smoothly, but has enough fullness for comfort and ease in action.

4. Choose your clothes with an eagle eye to their suitability. The secretary, the busy war worker will do her best work in clothes of classic simplicity, readily interchangeable with dickeys, lingerie laces or touches of glitter for after-five duties. It's wise, today, to buy clothes that will look smart two or three seasons hence.

5. Buy two or more pairs of hosiery at the same time...in the identical shade and weight so that one thrown out. Proportioned length (which means the right length for your leg), ensures that the garter will fasten into the sturdy welt at top. Select your correct foot size every time; ill-fitting hosiery is uncomfortable, short-lived and detrimental to foot health. Wear sheer stockings for dress-up, medium for every day, and heavy for sturdy use.

And then comes careful **WEARING!**

1. Here, too, as in buying, plan ahead! Keep each garment in apple pie order so that you can start off each day with a fresh change of clothes while the previous day's wear is hanging out free of wrinkles.

2. Cultivate the relaxing habit of changing from your street or office clothes to an attractive house dress. It's good for you, and saves wear and tear on your rayons.

3. Shields offer excellent protection from perspiration stains. And when you use an anti-perspirant, always follow the directions. Don't spray perfumes directly on fabrics.

4. Handle your stockings like the treasures they are! Roll hose down to the toe, then draw them up gently. Keep toenails pared and fingernails smooth to prevent catching threads. Turn your rings toward the palm of your hands or better yet, remove them when handling your hosiery.

Proper **WASHING** *and* **DRY CLEANING** *are important*

1. Look to the label for advice. If your dress is washable, the tag will generally give you detailed instructions. Always be sure to follow them accurately.

Lingerie and hose are easily washable, of course, and should be washed daily. But don't try washing rayon if "dry cleaning only" is recommended.

2. Don't allow garments to remain soiled. Treat a stained dress as you would appendicitis—the sooner attended to by a professional, the better.

3. When washing dresses, remove non-washable trimmings such as belts, buckles and buttons.

4. Wash hosiery before the first wear, and after each wear. Don't try to hasten their drying by ironing them, but allow at least 24 hours drying time.

5. Here are a few general rules for washing and ironing rayon.

Soak in mild, sudsy water. - Don't send garments to long standing in the laundry. Avoid hard rubbing and wringing. - Rinse thoroughly in lukewarm water. - Remove excess moisture in a bath towel. - Dry away from heat and strong sunlight. - Press when over-pressable on the reverse side to prevent "iron" marks. Use a moderately warm—NEVER HOT—iron. (Wash a heat-controlled iron, set the indicator at "low" or "rayon.")

EXTRA HINTS *for conserving rayon*

1. Give first aid promptly to split seams, loose buttons, slipping hems. Keep a well-stocked mending kit on hand. Visit the Notions Department of your favorite store and get acquainted with all the new mending supplies and gadgets; mending tape, for instance, to be pressed over a split or tear. When you can't mend yourself, leave to the professional.

2. Don't snip off snagged threads in hosiery. You can prolong the life of your stockings by using the repair or re-dyeing services available in so many shops.

3. Add new life to washed-out hosiery, slips and undies by tinting them. Be sure to follow the directions on the dye package. If the garments are no longer wearable, salvage all zippers, buttons, snaps and hooks.

4. Protect your clothes from dust and fly specks by putting your "date" dresses in garment bags, by covering your everyday clothes with shoulder covers. Keep drawers and closets uncrowded, so that all clothes stored are well aired. Hang clean, then put away in tidy bags or boxes.

May we say **ONE WORD MORE?**

These simple rules are the best insurance against shortages we know. You'll find it easy to practice such conservation, "a stitch in time" we can still be the best-dressed women in the world. Our soldiers are the best-equipped fighting men. Our civilians keep up morale—our conservation can help bring victory.

TUBIZE CHATILLON CORPORATION
2 Park Avenue, New York
Acetate and Viscose Rayon Yarns

This two page spread in April **GOOD HOUSEKEEPING** *will be used by thousands of Women's Clubs, Schools and Conservation Centers as the basis of an Apparel Conservation project distributed by* **GOOD HOUSEKEEPING.** *We will gladly send you free proofs of this advertisement for your own distribution and for sales training.*

OUR WARTIME PROGRAM

our own backyard

Our 7-year policy of Informative Labeling and Tested Quality now swings into step with the national program of Apparel Conservation. This double spread in April GOOD HOUSEKEEPING leads the way.

The demand for factual information about rayon is nothing new. American women have been eager to find out what to buy and how to care for it for years. And women have welcomed the Tubize Certified Quality Label as a reliable guide in buying their rayon lingerie and dresses.

Today, war has lifted apparel conservation from a casual economy to a patriotic duty. Rayon *must* be conserved for wartime uses...the women of America know this and are ready to cooperate.

So Tubize now steps up its successful, 7-year-old program to meet the wartime tempo. We gathered conservation information from every possible source; we had it checked and checked again by experts. Then, through our national advertising, we make this information available to millions of women, telling them how they can make the rayon apparel they buy or own wear better and last longer.

This wartime extension of the Tubize program means much to you who make and sell Rayon Apparel:

1. *It gives the merchandiser, operating in restricted markets, a known guide in selecting the rayon merchandise he buys.*
2. *It gives the retail salesgirl, rushed and harassed as she is, quick, authoritative hints to pass on to her conservation-minded customers.*
3. *It gives the consumer herself, aware of the need for conserving rayon, valuable advice on the wear and care of her lingerie and dresses made of Tubize Rayon.*

Seven years ago we began advising shoppers to "Take a Tip from the Tag."
MADE OF TUBIZE RAYON
the best care for longer wear
● Avoid perspiration damage . . . attach shields and change them frequently.
● Don't spray perfume directly on your clothes.
● A daily change will keep your dresses wrinkle-free.
● Use shoulder covers and garment bags in your closet.
● Fresh-air your clothes occasionally . . . but not in strong sunlight which tends to fade delicate shades.
● When pressing: Use a warm . . . NEVER HOT . . . iron; or, with a heat-controlled iron, set the indicator at "RAYON" or "LOW" . . . and press on reverse side. The most satisfactory results will be obtained if this garment is DRY CLEANED.
Today more important than ever we say "Take a Tip from the Tag—Save Rayon."

THE TUBIZE CHATILLON CORPORATION • 2 Park Ave., New York • Acetate & Viscose Rayon Yarns & Fabrics

This is a HIGH SPEED WAR

Modern warfare moves at a speed that was scarcely dreamed of just a decade ago. To match the speed of our enemies -- and beat them at their own game--requires maximum ingenuity on *all* fronts, military and industrial.

Universal RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED NE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND
WIRE TRAVELERS

TEXTILES

Are Speeded Up

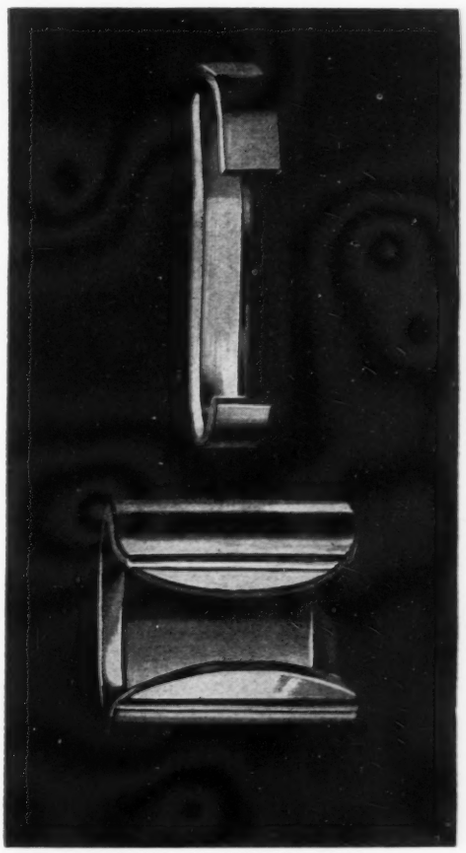
FOR VICTORY

Textiles are playing a part in the war that can't be overemphasized. Output must be kept at peak figures to meet the demands of our armed forces and our civilian population. That means *machinery* must be operated at peak *efficiency*. Spinning and twisting frames—whether old or new—cannot attain that efficiency without *good* ring travelers.

Universal Standard Ring Travelers are precision-made from the finest steel alloys. They're uniform in weight and shape, so correct yarn tension will be maintained and the entire yarn output will be smooth and strong. U. S. Travelers are *durable*, and actually cost less because they last longer, wear better, assure smoother production. Now while your frames are running full-speed, specify U. S. Ring Travelers—for maximum efficiency at "the focal point of good yarns."

The Bowen Patented Bevel Edge enables U. S. Ring Travelers to produce ideally smooth, even yarn. There are no split ends in throwing—no angular edges to flatten the end—no fly waste in spinning and twisting. Made and stocked in all sizes and weights, for all yarn counts.

U. S. Travelers will reach you in sealed metal containers, which keep them in perfect condition, prevent tampering or loss in count.



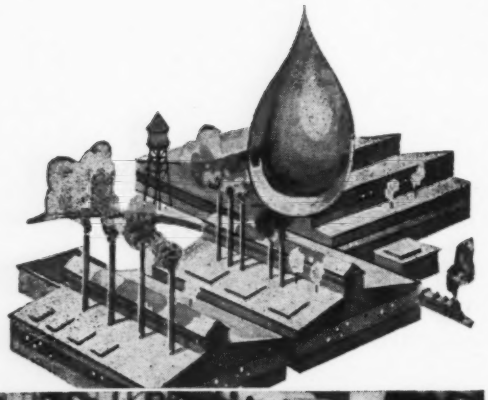
U. S. RING TRAVELER CO.

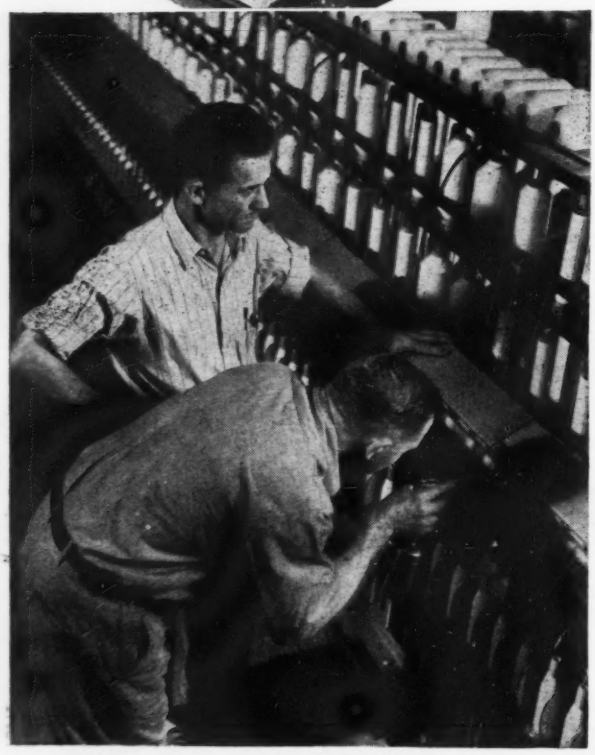
PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Standard TRAVELERS

Proper Lubrication is a wartime **must!**





Reduced friction means increased production – call in a Gulf Lubrication Service Engineer for effective help on your maintenance problems.

IN the high-speed drive for more and more production, that old devil "Friction" finds its greatest opportunity for damage. Now, more than ever, extra lubrication care pays big dividends.

Here are some of the more important steps you can take today to insure continuous full capacity operation of your equipment: Check to see that all shafts, bearings, and gears are properly aligned; check whether all moving parts are kept clean; and call in a Gulf Lubrication Service Engineer to help you install the best possible lubrication practice.

With a background of thorough training and broad practical experience with equipment similar to yours, Gulf Lubrication Service Engineers will help you obtain maximum production from every unit, a minimum of production delays caused by breakdowns and mechanical troubles, and other worthwhile benefits.

The services of a Gulf Engineer — and the Gulf line of more than 400 quality lubricants— are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

FOR VICTORY BUY
UNITED STATES
WAR BONDS
AND STAMPS

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION • GULF REFINING COMPANY
Gulf Building, Pittsburgh, Pa.

DURABILITY AND THE DURATION

Yardage by the mile...these few words best describe the tremendous demands now being made on American textile producers by our armed forces ☆ The material available for civilian use, therefore, must be processed to insure its maximum life ☆ Never was durability more at a premium ☆ There are ample supplies of high-class dyestuffs to meet military requirements and to color all civilian fabrics that will be manufactured.

GENERAL DYESTUFF CORPORATION

PICKER REPAIR PARTS WHEN YOU NEED THEM

WE keep on hand a very complete stock of all parts for Kitson pickers, and can usually ship the same day an order is received. We also can furnish beaters, ball bearings, screens and many other parts for other makes of pickers.

Under wartime conditions, it is of the utmost importance to keep machines running constantly and to be able to get prompt delivery on repair parts for keeping them running constantly.

In an emergency, a telegram or a telephone call will have the necessary repair parts at your plant the following day.

It is also a good idea to check your stock room and order picker parts on which the stock is low or is exhausted.

We can completely rebuild your pickers exactly like new, and when pickers are practically worn out and in need of more than ordinary repair parts, they can be completely renewed at far less than the cost of new machines with new frames.

AldricH MachinE

Greenwood, **WorkS** South Carolina

DO YOU KNOW THAT WHITE CEILINGS AND WALLS CAN INCREASE PLANT OUTPUT AS MUCH AS 10% ?

THE FACT that a fresh coat of *white* paint on plant ceilings and walls can step up production as much as 10% is well known to many operating and maintenance men. It's a fact you can check up *right now* by calling any lighting expert of your acquaintance. He'll agree that unless your plant is properly painted, you're losing up to 60% of the light you're paying for *and up to 10% of the production your present equipment could be turning out.*

PAINT, he'll tell you, *is part of your lighting system**. You may have the finest lighting equipment money can buy, but unless it's backed up by clean *white* ceilings and walls, you're not getting all the light you need for maximum output. Faulty workmanship, heavy spoilage, avoidable accidents resulting from fatigue and poor seeing —all take a toll of vital man-hours that *white* paint could help save.

"That's fine," you may say, "but we haven't the *time* to paint!" That's where your trained BARRELED SUNLIGHT Representative comes in!

Backed by our more than 40 years of specialization in *white* paint for industry, he's equipped to recommend the materials and procedure that will get you the extra light you need with the least possible interruption of production schedules. He can even recommend industrial painting experts who often can paint an entire plant without the loss of a single production hour.

There's a type and finish of BARRELED SUNLIGHT for every need and condition — each the most practical of its kind for large industrial areas. Send for your copy of "The Right Paint for Your Plant," which gives further details on what *white* paint can do for your plant. Better still, let a trained BARRELED SUNLIGHT Representative *inspect* your plant and help you plan a painting program geared to your production needs. Write or wire to U. S. Gutta Percha Paint Company, 8C Dudley Street, Providence, R. I.

**Better Vision Institute*

BARRELED SUNLIGHT

SPECIALISTS FOR OVER 40 YEARS IN WHITE PAINT FOR INDUSTRY

There's SELECTIVITY in Ahcopel

You're not limited to one type in motor cars, clothing or many other things you buy. Why then should you be limited to one type in a water repellent, particularly when the conditions under which it is used are far from constant?

Recognizing this fact, we offer a number of different types of Ahcopel for different purposes, and you may select the type best suited to your requirements and your pocketbook.

We can supply a type which will:—

1. Meet government specifications as to water repellency.
2. Meet government specifications as to mildew resistance.
3. Provide a high degree of resistance to spots and stains.
4. Leave the fabric porous.

Ahcopels can be applied by single bath method in dye jig, padder, quetch, or jig.

For additional information, write

ARNOLD, HOFFMAN & CO., INC.

Established 1815 • Plant at Dighton, Mass.

PROVIDENCE, RHODE ISLAND

New York • Boston • Philadelphia • Charlotte

MILITARY USES FOR AHCOPEL

Uniforms

Shelter Tents

Camouflages

Webbing

Sleeping Bags

Parachute Cords

BLENDS or BULLETS
must have balance

Accurate machine gun fire depends on an accurately balanced bullet . . . that's why certain munitions makers are turning to **bullet core-tips of Tenite**, the Eastman plastic made from the same pure cellulose acetate as Eastman acetate rayon. Tenite is tough, lightweight and dependable for uniformity.

Blended fabrics, too, depend on fine balance. And **Teca**, Eastman crimped acetate rayon, helps to build a "balanced" weave . . . gives it worsted-like texture and drape . . . spins in lively resistance to wrinkles . . . acts to reduce shrinking or stretching.

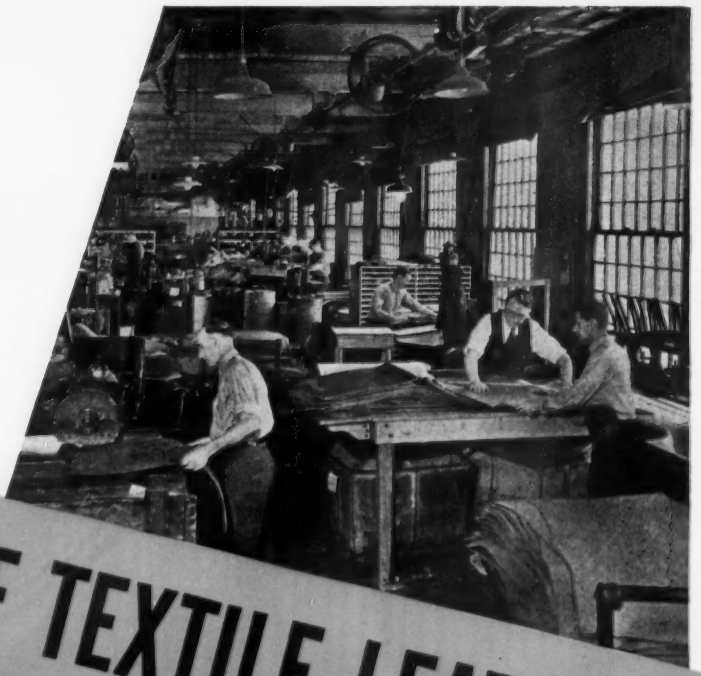
Eastman

CRIMPED ACETATE RAYON

A. M. TENNEY ASSOCIATES, Inc., 10 East 40th St., New York, sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of Eastman Kodak Company.

The...

ORANGE LINE OF TEXTILE LEATHERS



Better Performance— Lower Costs—from the line tanned and manufactured under single control...

When you equip your looms with leathers from Graton & Knight's ORANGE LINE, you can be sure you are getting products each made — from green hide to final inspection — with its ultimate use in mind. Leather for "Pickmaster" pickers is finished one way — for "Two-Fold" check straps another way — and so on.

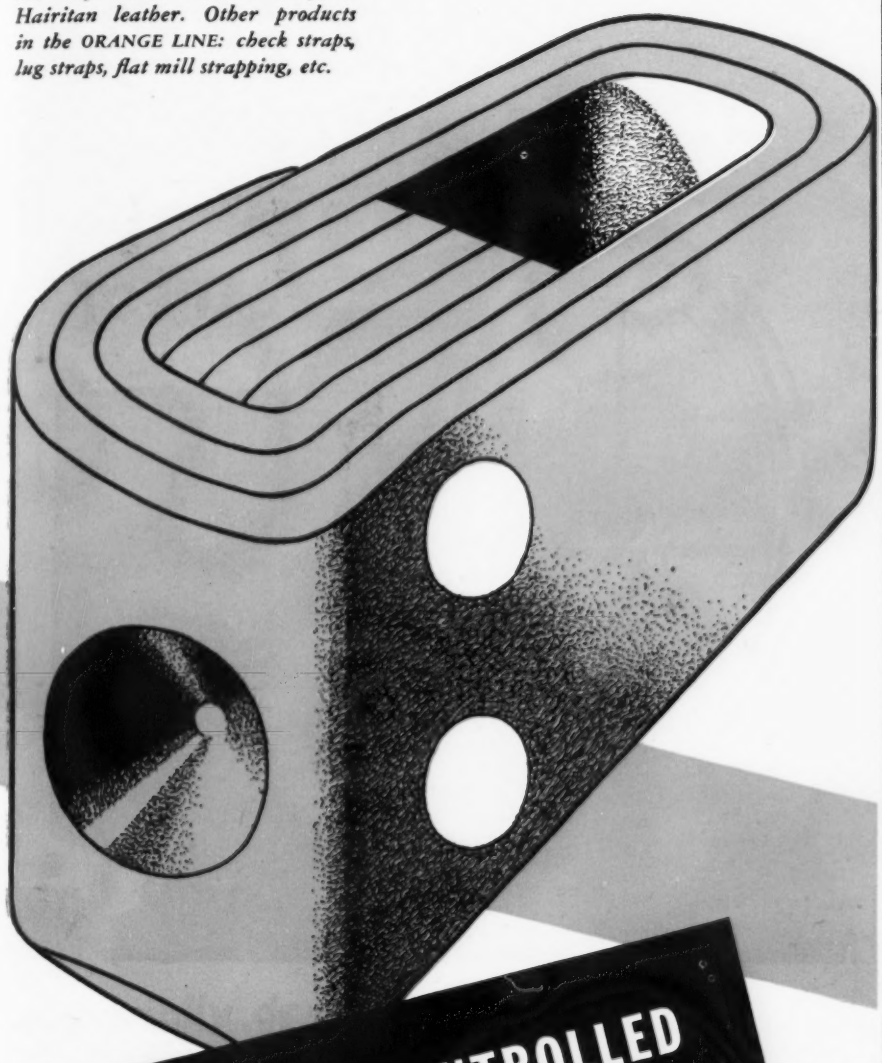
Graton & Knight tans its own leather, and has developed more than 30 variations of five basic formulas. Each step in the manufacturing process is planned according to the qualities desired in the finished products.

The ORANGE LINE is built around Graton & Knight's famous "Hairitan" loom leathers — made from a superior type of leather which has been acknowledged equal or superior to any "hair-on" leather ever tanned in this country or abroad. "Hairitan" weighs less — has greater tensile strength. It has low stretch — extremely high resilience. All these add up to lower maintenance and longer life.

All "Hairitan" products are identified by orange color on the flesh side. Items with hair-off are orange-colored all over. When you see orange color on leather, you can be sure it's the best for textiles, tanned and finished for a single purpose — under a single quality control.

the ORANGE LINE *ONE QUALITY CONTROL FROM HIDE TO LOOM*

Graton & Knight PICKMASTER, *with the "Life Saver" hole. Made from Hairitan leather. Other products in the* ORANGE LINE: *check straps, lug straps, flat mill strapping, etc.*



QUALITY-CONTROLLED FROM GREEN HIDE TO FINISHED PRODUCT

GRATON & KNIGHT CO.

WORCESTER — GRATON AND KNIGHT — MASSACHUSETTS

Supplied by the leading Distributors to the Textile Industry . . . see adjoining column (also listed in THOMAS' REGISTER).

DISTRIBUTORS

of the

"ORANGE LINE"

•

ALABAMA

Birmingham — The Young & Vann Supply Company

Mobile — McGowin-Lyons Hdwe. & Supply Company

•

GEORGIA

Atlanta — Fulton Supply Co.

Columbus — Columbus Iron Works Co.

Rome — Battey Machinery Company

•

LOUISIANA

Monroe — Weaks Supply Company, Ltd.

New Orleans — Standard Supply & Hdwe. Company, Inc.

•

NORTH CAROLINA

Charlotte — The Textile Mill Supply Co.

•

SOUTH CAROLINA

Charleston — The Cameron & Barkley Co.

Greenville — Hugh Black

•

TENNESSEE

Jackson — Southern Supply Company

Knoxville — Tennessee Mill & Mine Supply Company

Memphis — Lewis Supply Company

Nashville — Keith, Simmons Co., Inc.

•

VIRGINIA

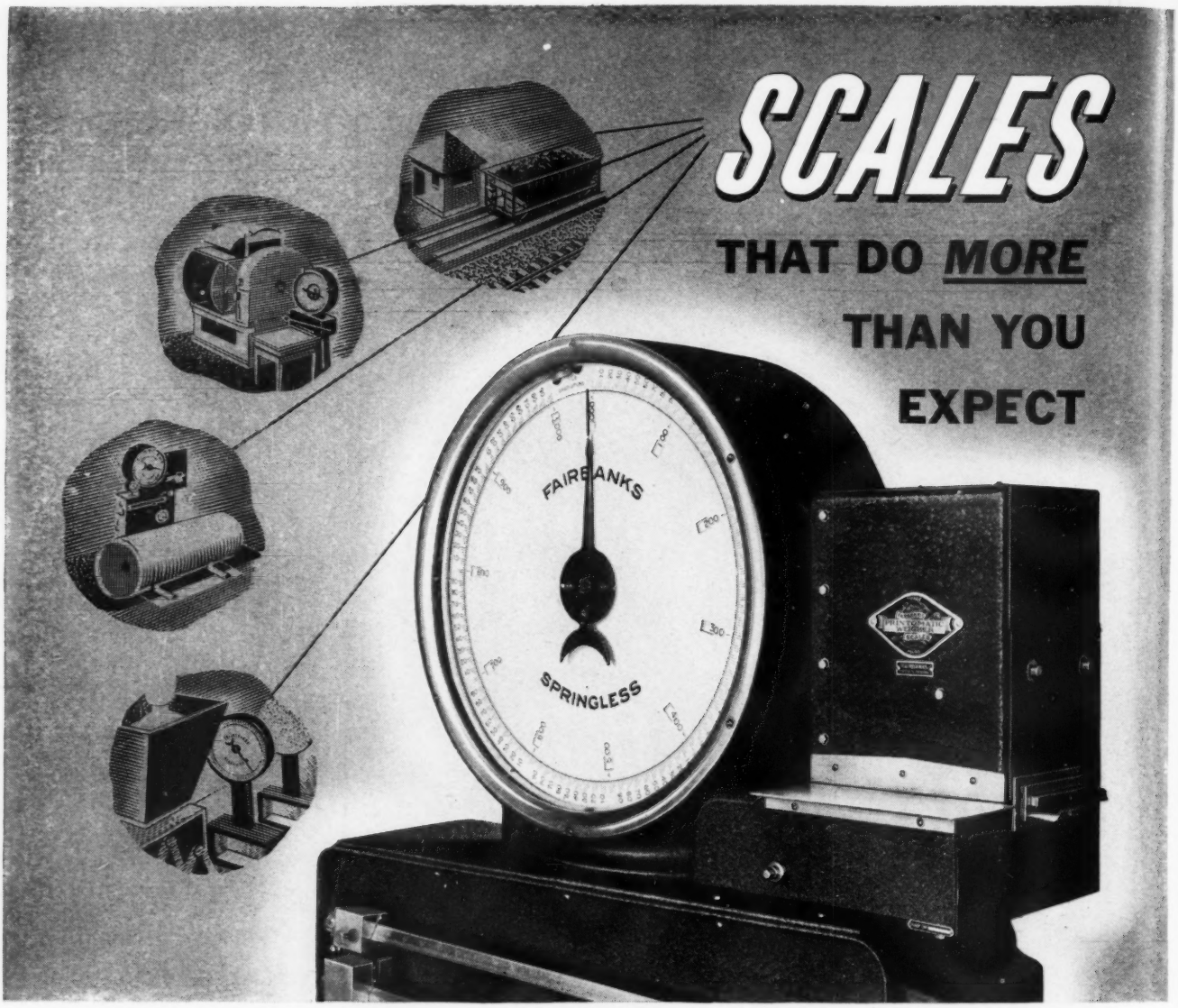
Lynchburg — Barker-Jennings Hdwe. Corporation

Newport News — Noland Company, Inc.

Norfolk — Taylor-Parker Company, Inc.

Richmond — Industrial Supply Corp.

Roanoke — Noland Company, Inc.



OF course, Fairbanks Scales are big, husky, and accurate. You have a right to expect these things in *any* good scale—and particularly of Fairbanks Scales with the world's broadest scale manufacturing experience behind them.

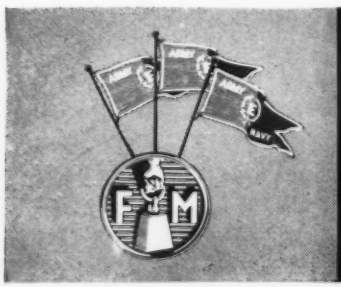
The feature about Fairbanks Scales that may surprise you the most, is their ability to do things you *don't* expect of scales.

Here are a few of many jobs done by Fairbanks Scales:

- They count small parts—more accurately than manual counting
- They weigh carloads of coal in motion and make a printed record of each weight
- They automatically control paint ingredients
- They automatically control aggregates
- They "keep the books" in steel plants, making printed records of incoming and outgoing shipments
- They keep accurate records on chlorination in water treatment
- They record the *flow* of liquid chemicals
- They guard secret formulas in compounding
- They control batching in bakeries
- They prevent disputes by eliminating the human element in weighing.

AND all of these things, only the beginning of the story, they do automatically and mechanically thereby eliminating human errors.

How Fairbanks Scales can be fitted into your production flow to speed up operations and eliminate errors may prove to be the most interesting discovery you ever made. Investigate now. Write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.



FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
MOTORS
GENERATORS
SCALES
WATER SYSTEMS
FARM EQUIPMENT
STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

FAIRBANKS SCALES

Scales

PENN SALT CAUSTIC SODA

Prompt shipments in tank cars specially designed for fast, easy, safe unloading

● Order your caustic soda from Penn Salt and enjoy the advantages of quick shipment, clean caustic and speedier handling.

Penn Salt's special tank cars are built with protective lining, special draining plates and caustic-resistant valves and interior connections. Steam heating coils do *not* contact the caustic soda—eliminating possible contamination.

The improved, insulated design assures *fluid* caustic in cold weather. And the easily accessible fittings save unloading time and prevent waste. Furthermore, the dome safety platform and guard railing protect your workmen.

Penn Salt caustic soda is available in tank car quantities as 50% and 72-73% solutions . . . as a solid in 750 lb. drums . . . or in flake form in 400 lb. and 125 lb. drums.

Technical help on any handling problem without obligation. Write for complete information about Penn Salt caustic soda.

PENNSYLVANIA SALT
MANUFACTURING COMPANY
Chemicals
1000 WIDENER BUILDING, PHILADELPHIA, PA.
New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma

WORK IT HARD, BUT GUARD IT WELL

OF COURSE, you are driving your Aluminum Alloy equipment to the limit. We need every gallon, every pound, every foot, every piece of the products that can possibly be produced to help win the war. But, bear in mind that you must make your equipment last a long time.

YOU CAN lengthen the life of hard-working, irreplaceable Aluminum Alloy equipment. Here are some ways of doing it; each must be engineered to suit the problem.

CATHODIC PROTECTION has proved effective where the chemicals or cooling water employed are corrosive. Simply add zinc strips in the right places, and the corrosive attack is stopped or slowed down considerably. Alcoa engineers, with years of research on such problems, can advise you on how and where to place those zincs.

PROTECTIVE COATINGS offer another means of making Aluminum Alloy parts last longer. Corrosion-resisting, pure Aluminum coatings can be applied by spraying. Oxide finishes are produced by chemical and electrolytic treatment. Baked resin coatings are very effective, where Aluminum is subjected to severe attack.

METALLIZING—building up worn, corroded, or damaged Aluminum parts with new metal—will give these parts a new lease on life.

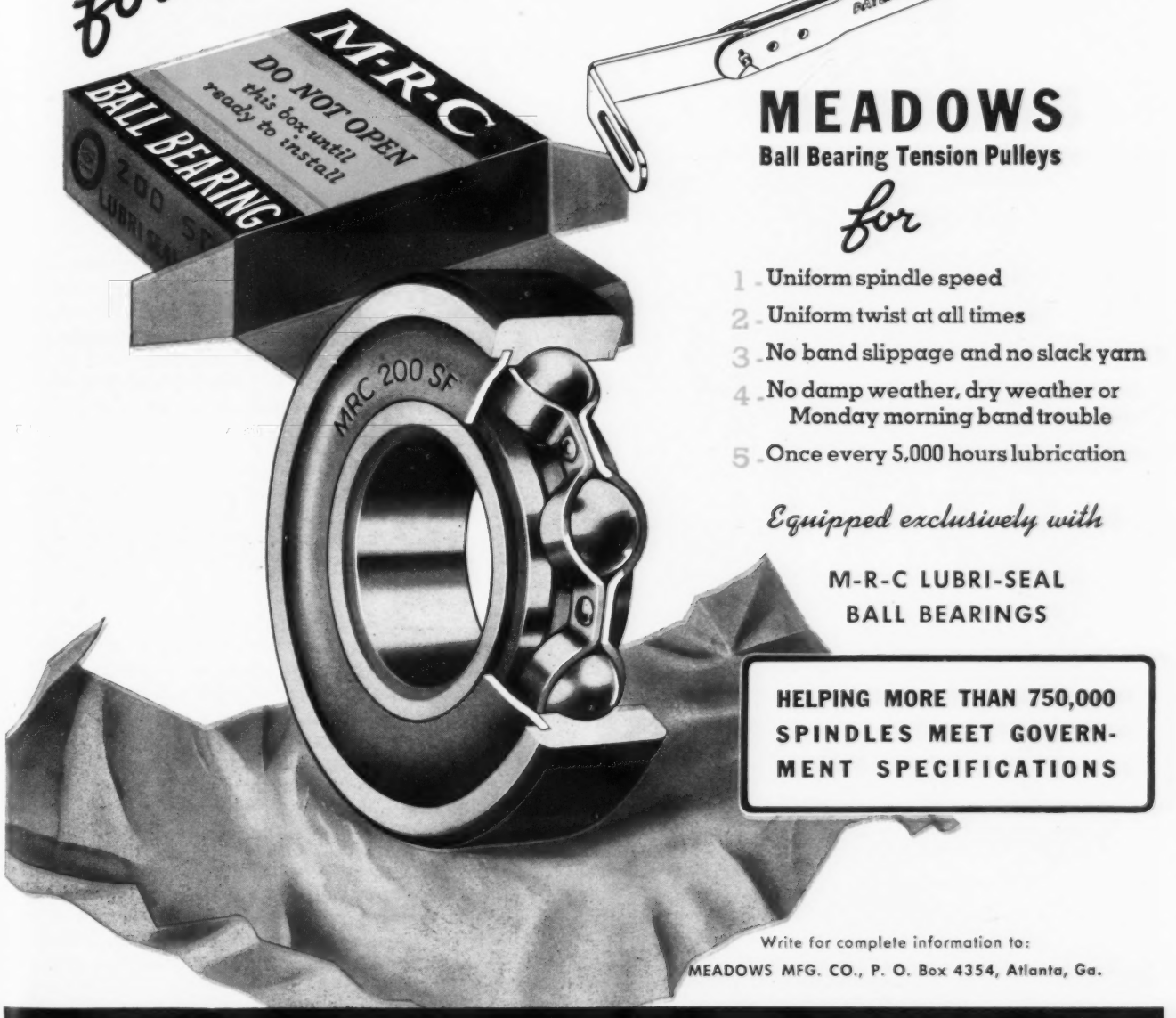
INHIBITORS may be the key to longer life of Aluminum Alloy processing equipment. Only a few parts of inhibitor per million of liquid are needed to deprive corrosive materials of their kick. Here again, the research of Alcoa engineers will guide you.

ALCOA ENGINEERS stand ready to help you get every possible hour of service out of your Aluminum Alloy equipment. Write and tell us your problems. Aluminum Company of America, 1939 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

M-R-C *and* MEADOWS

for the WAR PROGRAM



MEADOWS
Ball Bearing Tension Pulleys
for

1. Uniform spindle speed
2. Uniform twist at all times
3. No band slippage and no slack yarn
4. No damp weather, dry weather or Monday morning band trouble
5. Once every 5,000 hours lubrication

Equipped exclusively with

M-R-C LUBRI-SEAL
BALL BEARINGS

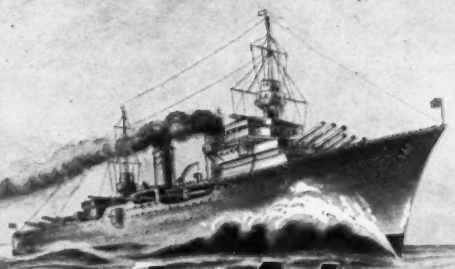
HELPING MORE THAN 750,000 SPINDLES MEET GOVERNMENT SPECIFICATIONS

Write for complete information to:
MEADOWS MFG. CO., P. O. Box 4354, Atlanta, Ga.

M-R-C BALL BEARINGS

MARLIN-ROCKWELL CORPORATION
Executive Offices: JAMESTOWN, N. Y.

WHITIN'S ORDERS ARE *Full Speed Ahead!*



WAR WORK FIRST

The worker peering at you through this large drop hammer is only one of hundreds of Whitin employees now devoting their entire time and skill to the production of vital war equipment. He is forging crankshafts for the steam engines which we are building for the Maritime Commission.

Uncle Sam has asked for our help and we are glad that we have the organization and the tools to make the wide variety of war materials which he has requested. It means longer hours of exacting work under constant pressure. But Whitin's skilled workers have taken on the job gladly. They know it must be done.

Mill men have taken on a big job too. The tremendous yardage of war textiles flowing from mills all over the country is not only a tribute to the manufacturing ability of the industry but, we think, to the quality of its machinery.

Conservation of critical materials severely restricts the construction of new machinery. For that reason we take increased satisfaction in the knowledge that our machines are well built — that they are well adapted to produce at the rapid and continuous pace demanded by mills today. We are still able to furnish replacement parts in order to keep those machines at peak performance under these severe conditions.

Although we are up to our ears in war work, we have not set aside our responsibility to the Textile Industry, and our research and development departments continue to plan for better machinery after the war.

WHITIN MACHINE WORKS

WHITINSVILLE, MASS., U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

PROVING ITS *Extra Value* UNDER CONTINUOUS OPERATION!

PIVOTAN
LEATHER BELTING

Present operating conditions in the textile industry soon demonstrate just which machinery and equipment can "take it."

In this crucible, PIVOTAN is proving its extra value—as expressed in greater flexibility, durability and gripping qualities, and its special adaptability to withstand the extreme speed and rapid flexing imposed on short-center drives.

These plus values of PIVOTAN are the result of an exclusive tanning formula developed by us to give leather extra gripping and flexing qualities. Try PIVOTAN, and see for yourself.

Made by

SOUTHERN BELTING CO.
Manufacturers and Warehouse Distributors
ATLANTA, GA.

EST. 1890

Sure—you'd give him the shirt off your back

. . . but carders can help more by maintaining peak efficiency in the card room

Remember—as you press for production, it's your card clothing that takes the rap. So, the quality of your card clothing directly affects the efficiency of your operation.

TUFFER—made by our exclusive patented Tufferizing Process, is your guarantee of wires that are cut even in length and free from burrs; wires with accurately formed square crowns; wires spaced evenly and parallel set in the famous Tuffer foundation.

This adds up to Card Clothing quality—the kind that stays on the job longer—the kind that helps you maintain peak efficiency.

When you Replace
Replace with→ TUFFER CARD CLOTHING

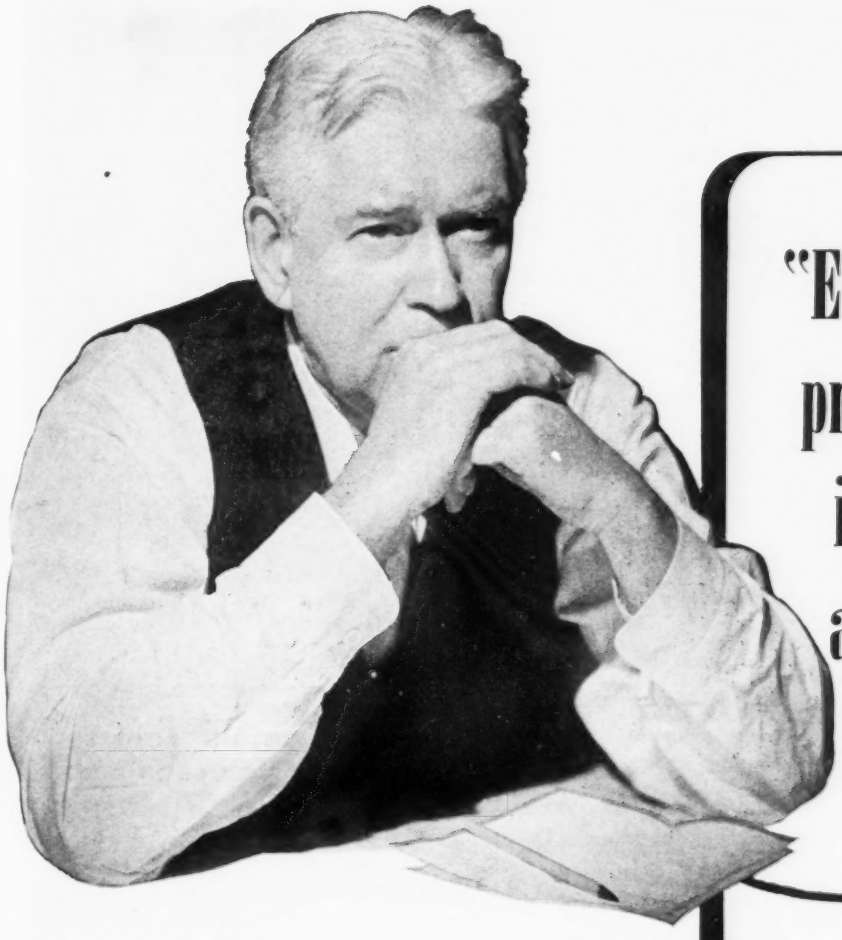
HOWARD BROS. MFG. CO.

WORCESTER, MASS.

Southern Plants . . . . Atlanta, Ga., Gastonia, N. C.
Branch Offices . . . . Philadelphia, Pa., Dallas, Texas
Canadian Agents Colwool Accessories, Ltd., Toronto 2

PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye and Regular Wire Heddles



"Every one of the problems we face is bigger than any one of us"

If it is a problem in dyestuffs — let us help . . . . we're as close to you as the 'phone at your elbow!

The ever-increasing requirements of our Government must be met . . . . this means that shortages and substitutions will be necessary for civilian work.

Perhaps we have been over the roads you are contemplating and can point out the way. Tell us your story . . . whether it is about specifications for war work, or color limitations for civilian work.

Pick up the 'phone and get in touch with the nearest CIBA office.

★

The Ciba Laboratory Exists to Serve You!

Ciba Chemists, Colorists and Service Technicians are ready to co-operate with you to solve your problems.

DYESTUFFS • CHEMICALS • INTERMEDIATES

CIBA COMPANY, INC.

Greenwich & Morton Sts.

NEW YORK

BOSTON · CHICAGO · MONTREAL · CHARLOTTE
PROVIDENCE · SAN FRANCISCO · PHILADELPHIA

VAT DYES OF THE DOW CHEMICAL COMPANY

IF YOU ARE RUNNING A WAR FACTORY

please accept this personal invitation

IF you are engaged in any kind of war production you are invited to make use of a free service which has already stepped up production in hundreds of factories—large and small.

Here is how it works. You simply telephone your nearest G-E lamp office, or your Electric Service Company, Electrical Jobber or Contractor. Say: "We want to do all we can to speed production. Will you have a lighting man call and see if he can help us?" The lighting man will carefully inspect your lighting, look for bottle-necks caused by glare or gloom or shadows. He'll show you how to correct those troubles—with the least possible use of critical materials.

You can't *lose* by accepting this invitation. And you may *gain* both in production and in employee morale. So won't you phone today?

TYPICAL LIGHTING TROUBLES WHICH HOLD BACK PRODUCTION

1. GLARE—from bare bulbs or wrongly placed fixtures. You may not realize how this is holding back your production.

2. SHADOWS—sometimes a worker's own shadow slows up his work. Moving a light fixture often removes this hazard.

3. GLOOM—dirt and grease on bulbs and reflectors can cut out *half* your light—and slow down production accordingly. Soap and water work wonders.

For wartime lighting help . . . Phone one of these G-E lamp numbers or your Electric Service Company or G-E lamp supplier

ATLANTA.....**WAlnut 9767**
Red Rock Bldg.

BOSTON.....**HAncock 1680**
United Shoe Machinery Bldg.

BUFFALO.....**LAfayette 7194**
Genesee Bldg.

CHICAGO.....**HArrison 5430**
842 S. Canal St.

CLEVELAND.....**CHerry 1010**
Williamson Bldg.

DALLAS.....**LD 224**
General Electric Bldg.

DENVER.....**MAin 6141**
Merchandise Mart

DETROIT.....**CHerry 6910**
Book Tower

KANSAS CITY.....**VIctor 7671**
2100 Wyandotte St.

LOS ANGELES...**MIchigan 8851**
Edison Bldg.

MINNEAPOLIS.**GRanville 7286**
Northwestern Terminal

NEW YORK..**Wickersham 2-6300**
570 Lexington Ave.

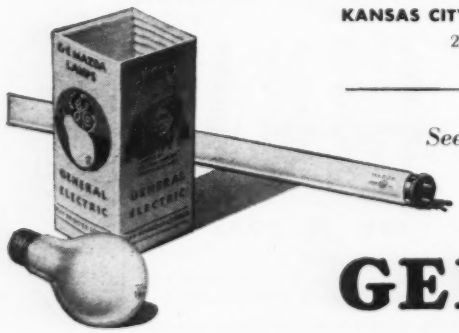
OAKLAND.....**HIgate 7340**
1614 Campbell St.

PHILADELPHIA...**KINgsley 3336**
Mitten Bldg.

PITTSBURGH.....**FAirfax 7911**
601 E. General Robinson St.

PORTLAND.....**BEacon 2101**
Oregon Transfer Bldg.

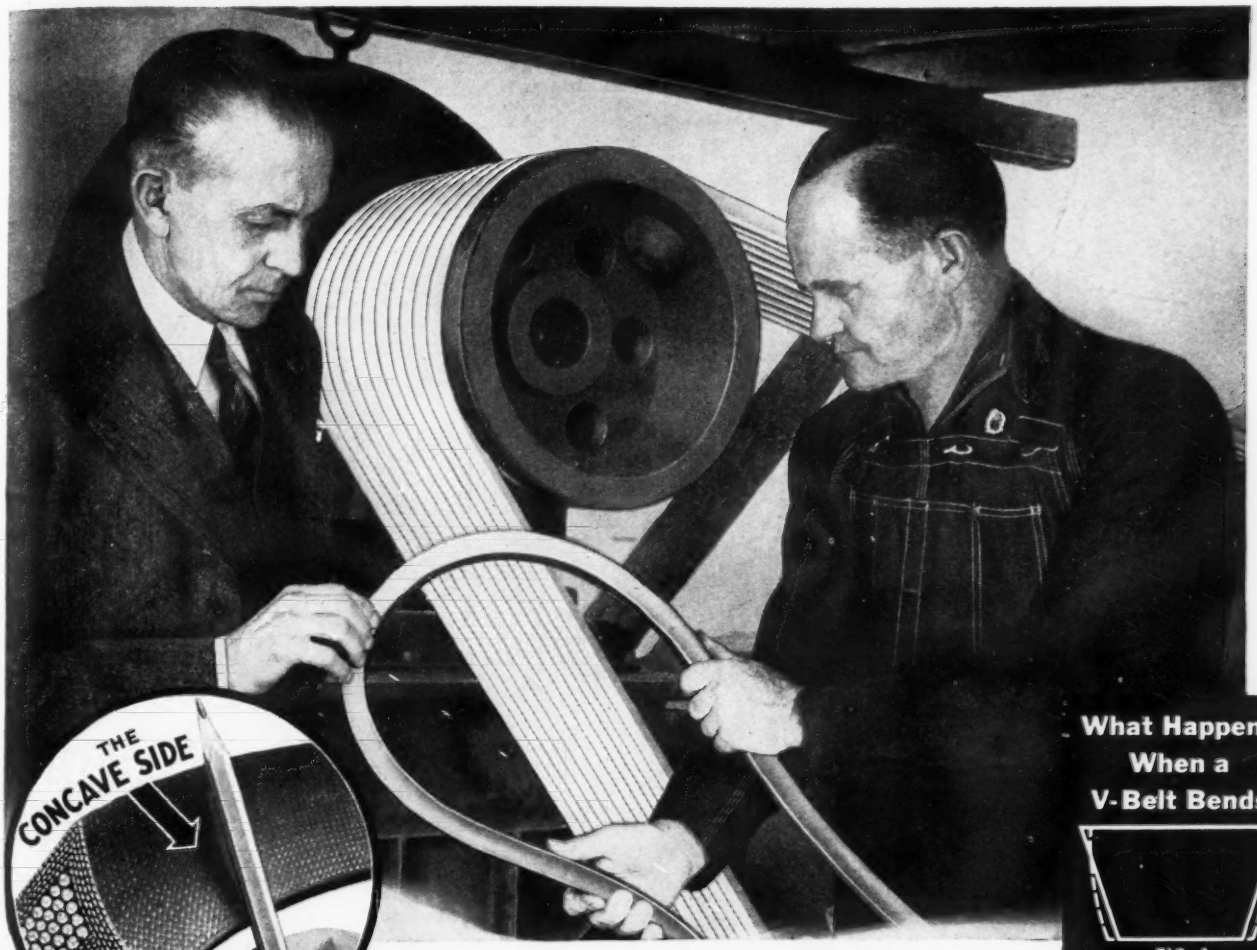
ST. LOUIS.....**CHestnut 8920**
710 N. 12th Blvd.



See your phone book for G-E Lamp offices in other principal cities

G-E MAZDA LAMPS

GENERAL ELECTRIC



What Happens When a V-Belt Bends

FIG. 1

FIG. 2

This Simple Test Shows the *Importance* of the CONCAVE SIDE!

432

You can see for yourself why belts built with the Concave side should be used in *your* plant if you will just pick up any straight-sided V-Belt and bend it as it bends in going around its pulley. As the belt bends, grip its sides as shown in the large photograph above. You will feel those sides *change shape*. The top of the belt, being under tension, narrows. The bottom, under compression, widens. The sides bulge out—as shown in Figure 1 (above, right).

Now bend a V-Belt that is built with the patented Concave side. The same shape-change takes place—but it merely *straightens* the precisely engineered Concave side, as shown in Figure 2. This belt, when bent, exactly fits its sheave groove. Two savings result. FIRST:—there is no out-bulge—therefore the entire side of the belt wears evenly and this means *longer life*. SECOND:—The entire side of the belt uniformly grips the sheave-groove wall. This carries heavier loads without slippage—a saving in belts for you, a saving in rubber for the nation.

Only belts built by Gates are built with the Concave side, a Gates patent.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

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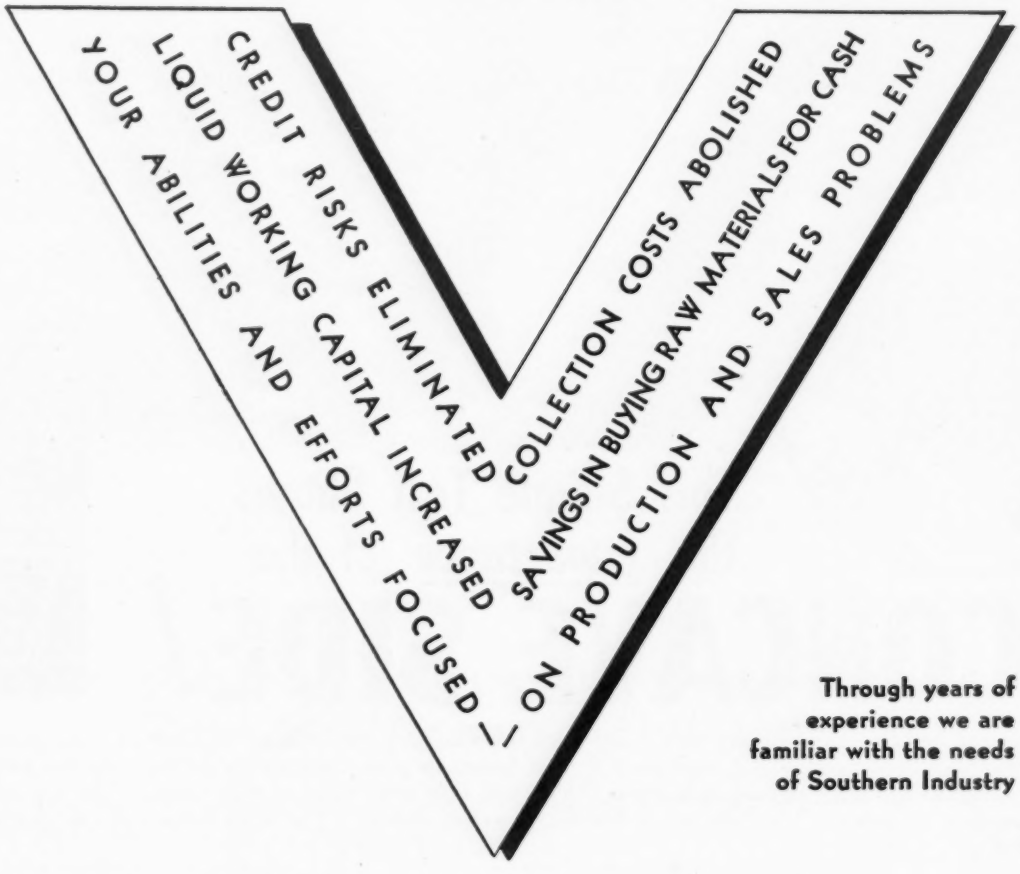
SOUTHERN FACTORING SERVICE

For Southern Industry

The Wartime South helps speed victory by using Southern factoring service


CREDIT RISKS ELIMINATED
LIQUID WORKING CAPITAL INCREASED
YOUR ABILITIES AND EFFORTS FOCUSED — ON PRODUCTION AND SALES PROBLEMS
COLLECTION COSTS ABOLISHED
SAVINGS IN BUYING RAW MATERIALS FOR CASH

Through years of experience we are familiar with the needs of Southern Industry

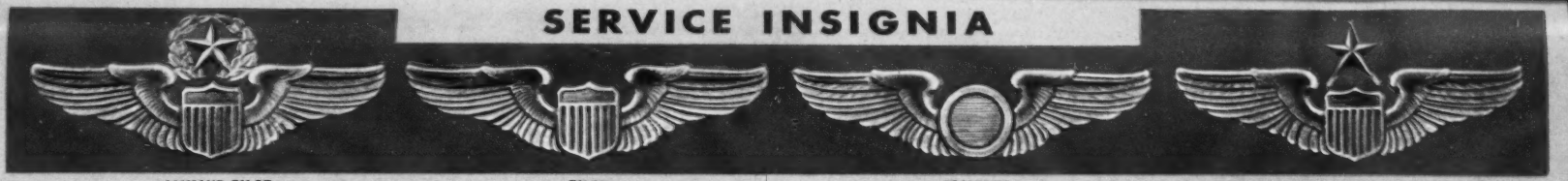
For full information write—

Factoring Division

TRUST COMPANY *of Georgia*

1891 • ATLANTA • 1943

SERVICE INSIGNIA



COMMAND PILOT — PILOT — OBSERVER — SENIOR PILOT

GENERAL

LT. GENERAL

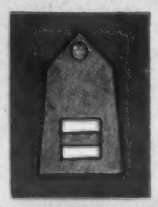
MAJOR GENERAL

BRIG. GENERAL

COLONEL

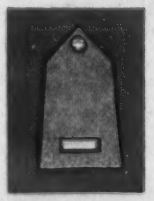
LT. COLONEL

MAJOR



CAPTAIN

1st LIEUT.



2nd LIEUT.

1st CL. PRIVATE

6th CL. SPEC.

1st CLASS SPEC.

CORPORAL

SERGEANT

STAFF SGT.

TECHNICAL SGT.

1st SERGEANT

MASTER SERGEANT

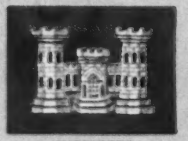
AIR CORPS

QUARTERMASTER CORPS

ADJ. GEN.'S DEPT.

GENERAL STAFF

ENLISTED MAN'S LAPEL U. S.



ENGINEERS

FIELD ARTILLERY

COAST ARTILLERY

CAVALRY

★ INFANTRY

MED. CORPS

MED. ADMIN.

VETERINARY CORPS

DENT. CORPS

SAN. CORPS

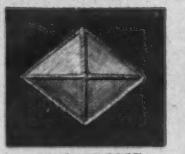
NURSES' CORPS

ARMY NURSE SCHOOL

ORDNANCE

SIGNAL CORPS

NAT'L GUARD BUR.



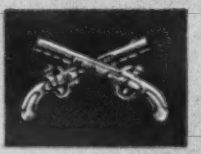
FINANCE DEPT.

CHAPLAIN (Christian)

CHEM. WARF. SERV.

CHAPLAIN (Jewish)

MIL. INTELL.



MILITARY POLICE

GENERAL'S AIDE

ENLISTED MAN'S CAP EMB.

UNASSIGNED OFFICER

OFFICER'S CAP EMB.

JUDGE ADV. GEN.'S DEPT.

WARRANT OFFICER

BAND

INSPECT. GEN.'S DEPT.

U. S. MILITARY ACAD. (West Point)

★ Tank Units are designated by tank below crossed Infantry rifles.

★ Anti-tank Units are designated by crossed Infantry rifles and letters "A" and "T" at left and right respectively.

WARRANT OFFICER'S CAP EMB.

OFFICER'S U. S.

ENLISTED MAN'S LAPEL BRANCH INSIG.

© 1942 by Thomas R. Diver
The Louis Allis Co., Milwaukee

BUY U. S. WAR BONDS — REGULARLY EVERY PAY DAY

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

Now KOPAN

A HARTEX PRODUCT

PATENTS PENDING

A PERMANENT CELLULOSE FINISH

• A major development in modern fabric finishing. Suitable for sheets, damasks, shirtings and many types of knitted and woven fabrics. Imparts to each fiber a permanent coating which adds to durability, strength and appearance. Among the many advantages of KOPAN are included:

EXCELLENT SHRINKAGE CONTROL — Minimizes shrinking and stretching in laundering and dry cleaning. An active aid to Sanforizing.

INCREASED TENSILE STRENGTH — Fabrics are more resistant to abrasion and wear.

EVEN PENETRATION — Produces a clean, smooth surface. Spreads evenly with pigment colors, providing uniform and clear shades.

ELIMINATES SLIPPAGE — Anchors each thread, thus minimizing fraying and displacement.

WIDE APPLICATION — Available in several viscosities to provide a great variety of desired finishes with the required hand and appearance.

AN EXCELLENT BINDER — Works perfectly with fillers, pigments and weighting compounds.

EASY TO USE — May be applied before boil-off, during mercerization, before or after dyeing or bleaching — or as final finish.

ECONOMICAL — Low cost helps meet production standards. No special machinery required.

PERMALON makes news!
A HARTEX PRODUCT
A PERMANENT CELLULOSE FINISH
HART PRODUCTS CORP.
Chemicals for Every Phase of Textile Processing
MOSQUITO NETTING PROCESSED WITH PERMALON MEETS GOVERNMENT SPECIFICATIONS

KOPAN is a natural outgrowth of the successful use of PERMALON for military fabrics. Millions of yards of mosquito and head nettings for use by our armed forces, have been processed with PERMALON. KOPAN possesses all the advantages of PERMALON plus a flexibility of formula which permits extensive variations for civilian uses and specific fabrics. Only finest quality cellulose is used in making KOPAN.

Celludye **PIGMENT COLOR CONCENTRATE FOR USE WITH KOPAN**

As in PERMALON, no additional treatment is required when these colors are added to KOPAN. Quick penetration — uniform, clear shades are assured. THE HART PRODUCTS CORP. is the sole selling agent for Celludye Pigment Colors.

CONSULT US: *The versatility of* KOPAN *is constantly widening its field of application. Our technical staff will cooperate with manufacturers and processors to develop a* KOPAN *formula for their special needs. Write for further information.*

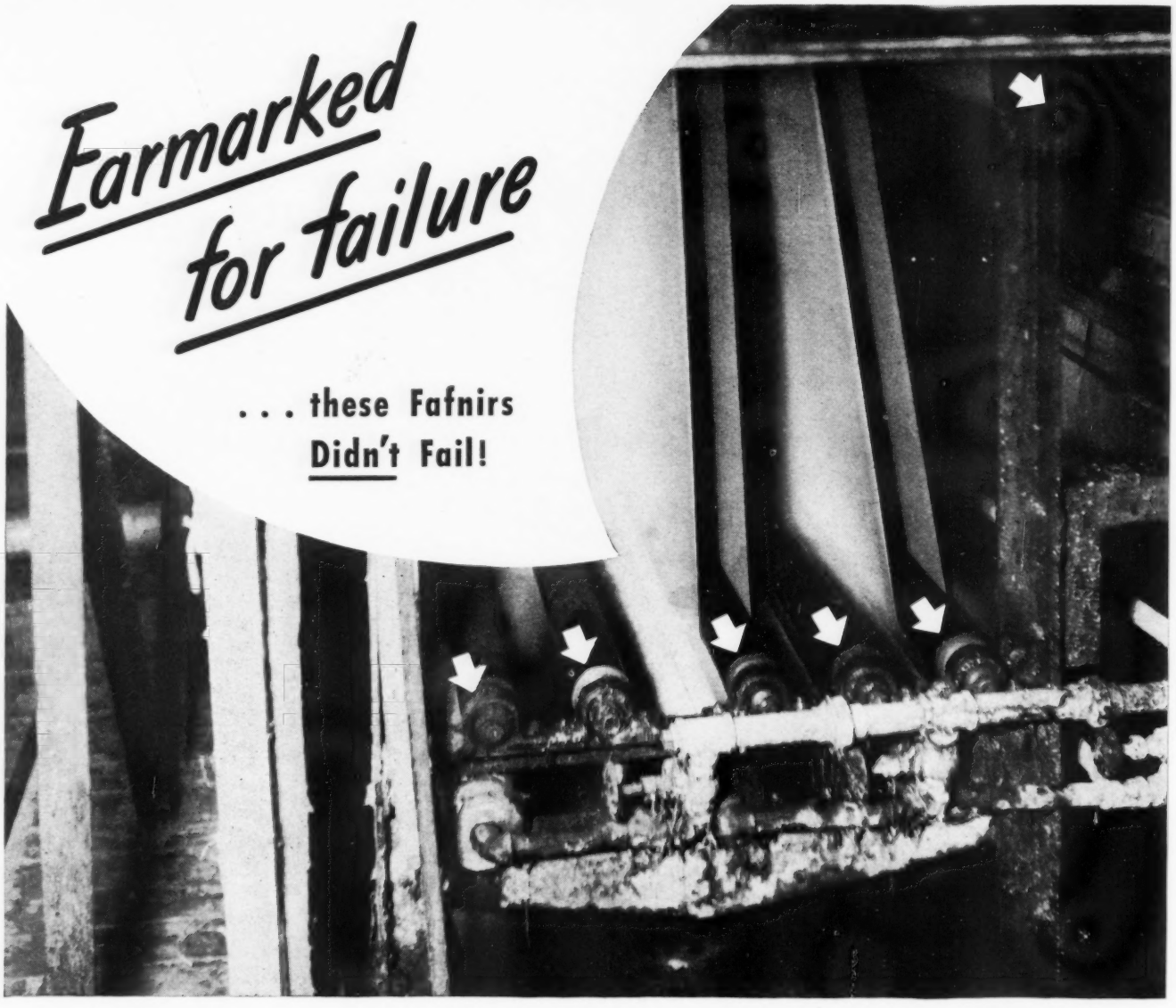
HART PRODUCTS CORP.

Chemicals for Every Phase of Textile Processing

1440 BROADWAY, NEW YORK, N. Y.

The HART PRODUCTS COMPANY of CANADA, LTD. • GUELPH, ONTARIO

Earmarked for failure



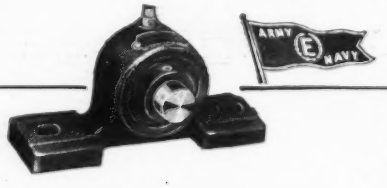
. . . these Fafnirs Didn't Fail!

"The presence of moisture and steam in this machine," said the manufacturer, "will lick any ball bearing that goes on the job. Ball bearings just won't stand up under these conditions!"

BUT, Fafnir's engineer refused to accept this statement . . . for good reasons. In other installations . . . as tough or tougher, under similar operating conditions . . . Fafnir units were giving highly satisfactory service. Maintenance men and mill mechanics reported minimum trouble . . . replacements *had* been made only after the Fafnirs long out-lived any other type of bearing ever used.

In the face of proven records of Fafnir performance, the customer agreed to the installation of Fafnir SAK units on the roller shafts pictured here. That was several years ago. Some of the original Fafnirs are still going . . . few, very few have been replaced. Now, this customer is completely sold on the dependability of Fafnir Ball Bearings . . . and won't use anything else when the job calls for ball bearings.

To Textile machinery makers and operators, Fafnir's Balanced Design . . . larger balls and deeper races . . . means higher machine efficiency and long, trouble-free bearing life under all load and operating conditions. The wide variety of Fafnir Textile Ball Bearings . . . standard and specialized . . . are the result of many years experience working directly with textile machinery designers. For fast, safe, continuous production, depend on Fafnirs. The Fafnir Bearing Company, Textile Division, New Britain, Connecticut. Branch offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.



FAFNIR

BALL BEARINGS

NOPCO helps keep 'em DRY!

NOPCO water repellents are being widely used today in the finishing treatment of military fabrics. Sleeping bags, tents, uniforms, netting for jungle hammocks, webbing of all kinds . . . these are just a few equipment items where water repellent agents are used for weatherproofing and mildewproofing.

Nopco brings long experience in the water repellent field to finishing plants now engaged in war production. If your plant has a finishing problem, Nopco research chemists will be glad to work with you. Write today to the nearest Nopco office for further information without obligation.

BUY WAR BONDS AND STAMPS

There's a Nopco Water Repellent Agent for Every Requirement.

NOPCO ESE — New type waterproofer for use with solvent plus orthophenyl phenol for mildew.

NOPCO ESF — Solvent type water repellent containing orthophenyl phenol for mildew.

NOPCO ESG — Aqueous water soluble type water repellent containing orthophenyl phenol for mildew.

NOPCO ATO — Straight water repellent for use in aqueous solution.

NOPCO 1931-B — Concentrated water repellent to be used in aqueous solution.

NOPCO 1931-C — Water repellent with copper stearate to be used in aqueous solution. Mildewproof.

NOPCO
REG. U.S. PAT. OFF.
"EVOLVED THRU RESEARCH"

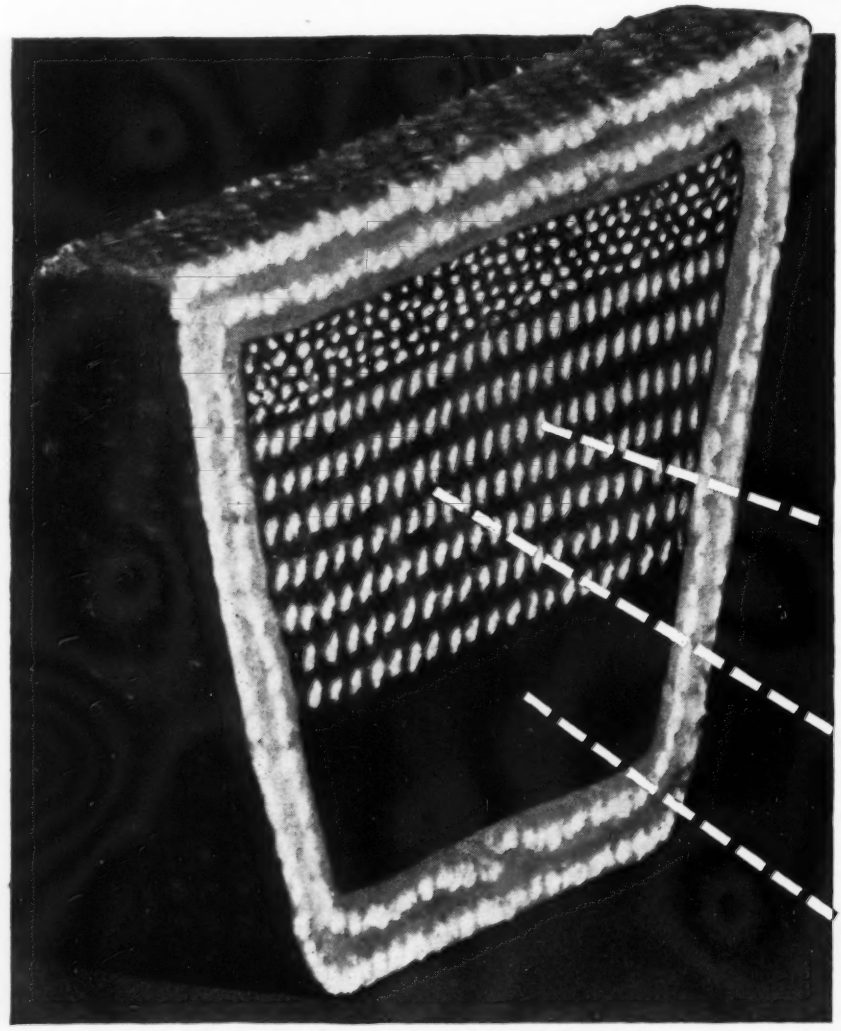
Water Repellent Agents . . .

NATIONAL OIL PRODUCTS COMPANY

HARRISON, NEW JERSEY

BOSTON CHICAGO CEDARTOWN, GA. RICHMOND, CAL.

Here's a Slice of LONGER V-BELT Life!



It's the section of a new Texrope Super-7 . . . and the new ways Longer Life is Built right into it Point to ways *You* can make Your V-belts last Longer.. whatever Brand you Use!

V-Day needs every V-Belt

50% STRONGER CORDS produced by the new Flexon process combat stretching. **YOU** can fight stretching—and the slip and burning that result — by promptly taking up any slack that may develop. Remember, many V-belts are now working four times as many hours a week as in peacetime, may need inspection *four times as often!*

★

20% MORE CORDS than before help protect the new Texrope Super-7 against strains and breaks. **YOU** can minimize breaks in your plant — whatever make of V-belts you use — by requiring that V-belts *never* be pried into grooves. For V-belts, prying is a back-breaking operation!

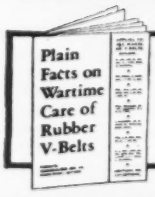
★

COOLER-RUNNING CUSHION of special rubber "eases" cords around sheaves—for smoother flexing and less heat. **YOU** can fight heat by preventing misalignment. It causes rubbing of belt sides, extra heat and shorter V-belt life. So keep sheave grooves in line—shafts parallel.

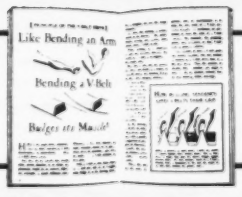
★

WHEN YOU DO NEED new V-belts, *invest in the best* — Texrope Super-7!

A 1543-A



FREE! Every engineer should have this valuable new handbook in his technical library.



It applies to *all* makes of V-Belts—contains no advertising. Write Allis-Chalmers for it *now!*

ALLIS-CHALMERS

TEXROPE* SUPER-7 V-BELTS

WE WORK FOR VICTORY — WE PLAN FOR PEACE

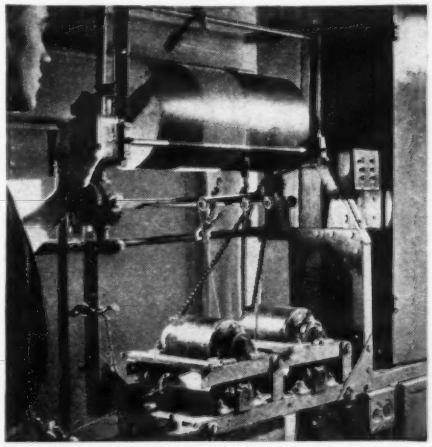
*Trade mark registered U. S. Patent Office. Texrope Super-7 V-Belts are the result of the cooperative research and design genius of two great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers. Available in all sizes..... ½ h.p. to 2,000 h.p.

Textile chemicals

ARE ONLY ONE GROUP OF MANY PRODUCTS OF ROHM & HAAS RESEARCH THAT WORK FOR INDUSTRY IN PEACE AND WAR

AMONG textile mills, Rohm & Haas Company is best known for its development of TRITONS, RHOTEXES, DEGOMMAS, RHOPLEXES, RHONITES, PROTOLIN, FORMOPON and LYKOPON.

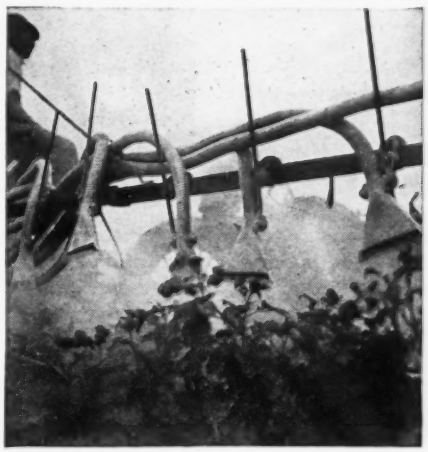
This Company through research has expanded into many other fields of industry. This page shows a few typical examples.



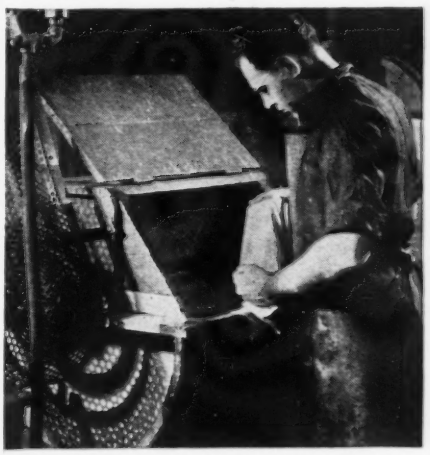
MODERN FAST TEXTILE COLORS presented a need for reducing agents. Rohm & Haas LYKOPON was the first to fill this need. Among our many other developments are RHONITE finishes that make fabrics "crushproof". This yarn slasher is typical of equipment in our textile laboratories which permits close approximation of mill results.

CRYSTAL-CLEAR ACRYLICS are stronger, lighter and more transparent than glass. This type of plastic was first investigated in Rohm & Haas laboratories, first brought into commercial production in our plants. Known as PLEXIGLAS, it forms noses, tail assemblies, cockpit covers, gun turrets aboard every type of Army and Navy airplane.

SEARCH FOR A SYNTHETIC, organic insecticide made wholly from American raw materials was started 15 years ago by Rohm & Haas chemists. LETHANE was found in 1930. Today, LETHANE 384 and LETHANE 384 SPECIAL stand ready to provide a major portion of the toxicants for the nation's livestock, industrial and household sprays.



LETHANE 60 WAS DEVELOPED for use in agricultural dusts and sprays. Wide commercial use of this synthetic insecticide has demonstrated that replacing 50% of the rotenone or pyrethrum in dusts and sprays with LETHANE 60 not only stretches this country's limited supplies of botanical toxicants, but actually makes better products.



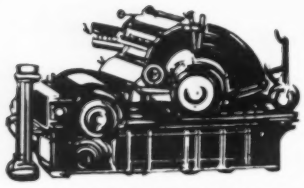
THE ROHM & HAAS COMPANY developed the first synthetic bate for leather. Today, this bate, under the name OROPON, is in common use in every country of the world. Later developments include synthetic tanning materials to produce great amounts of high quality white leather and finishes producing flexible and washable leathers.

TRITON ■ OTEX, DEGOMMA, RHOPLEX, RHONITE, PROTOLIN, FORMOPON, LYKOPON, PLEXIGLAS, LETHANE and OROPON *are trade-marks, Reg. U. S. Pat. Off.*

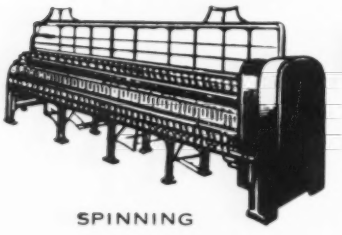
ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

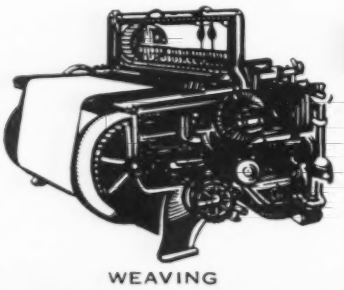
Manufacturers of Chemicals including Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes . . . Chemicals for the Leather, Textile and other Industries



PREPARATION



SPINNING

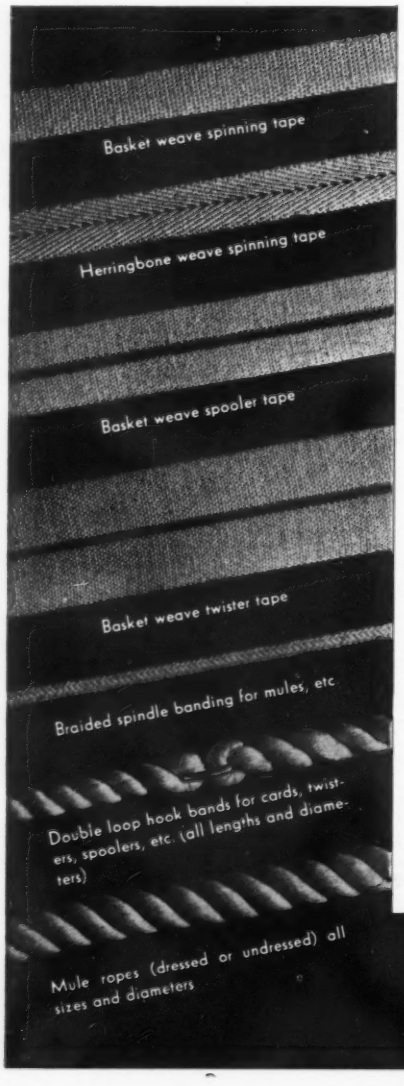


WEAVING

REDUCE BUYING DISPERSION

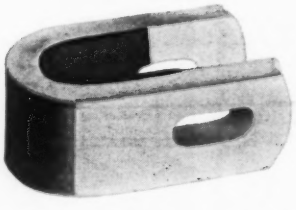
LET US SERVE ALL 3 DEPARTMENTS

WHY write 3 letters when 1 will suffice? Why interview 3 salesmen, when 1 can supply your requirements? Why divide responsibility when it can be concentrated? Why split up your business, when concentration will save time, temper and money? Why practice "buying dispersion," when "concentration" will serve you better?


Basket weave spinning tape
Herringbone weave spinning tape
Basket weave spooler tape
Basket weave twister tape
Braided spindle banding for mules, etc.
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes (dressed or undressed) all sizes and diameters

Think it over when you are in the market for spinning tape, braided or twisted banding and rope (for preparatory, spinning or twisting machinery), and canvas lug straps. The Lambeth Line includes all of them, and every product represents a quality which 50 years of conscientious service to the textile industry has made possible.

"BILTRITE" (PATENTED)



CANVAS LUG STRAP

This new product is an outstanding example of Lambeth quality. It's built up and molded in one continuous operation. The glue has no chance to set before the molding is completed. Longer life is thus obtained.

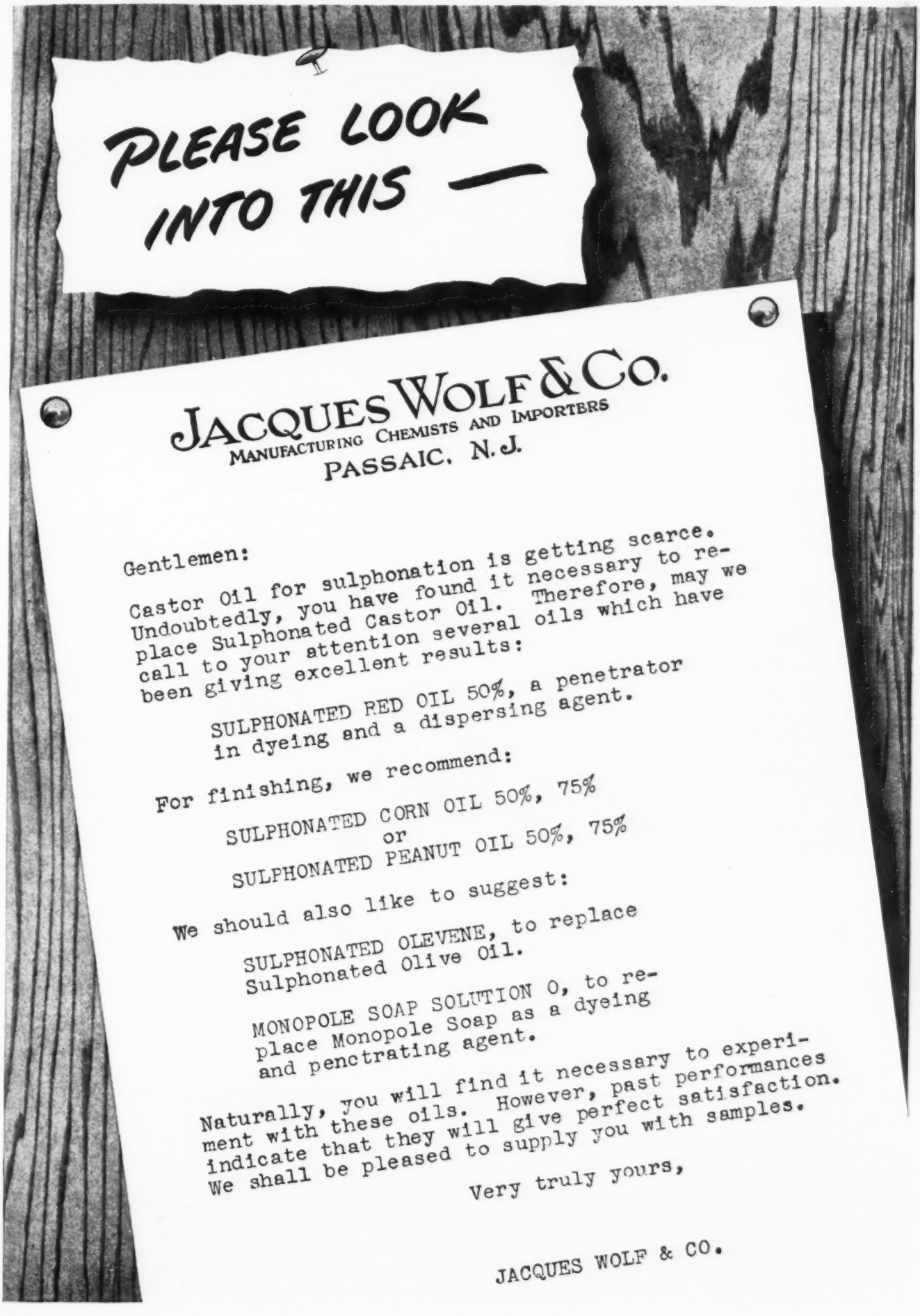
When you think of preparation, spinning or weaving, think of —

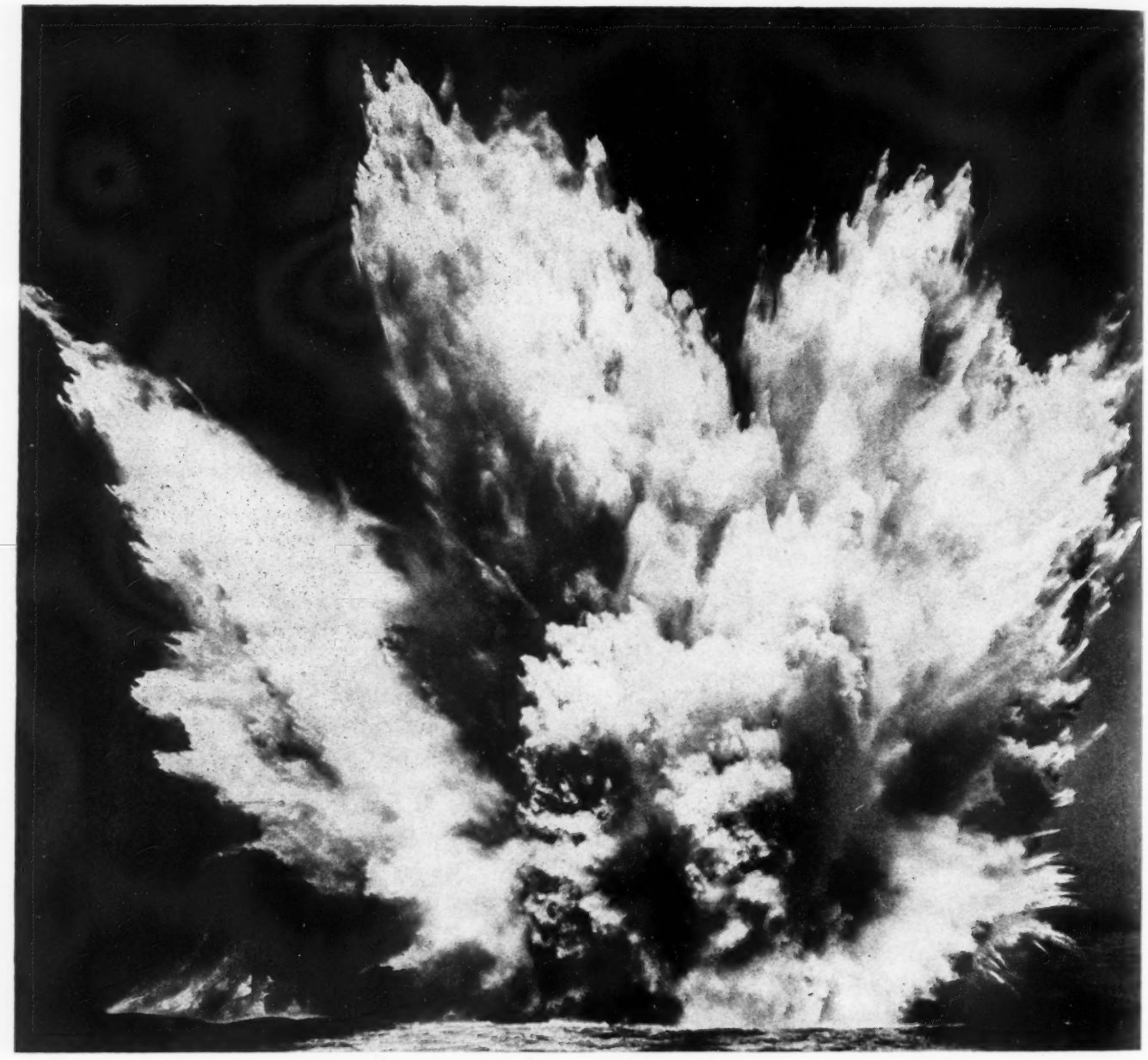
LAMBETH ROPE CORPORATION

NEW BEDFORD, MASS.

Southern Office, Johnston Bldg., Charlotte, N. C.
Manufacturers of Spinning Tape, Mule Rope and Banding
Also Sales Agents for Lambeth Products Corp., Antrim, N. H.
Makers of Canvas Lug Straps

The Lambeth Line


PLEASE LOOK INTO THIS —
JACQUES WOLF & Co.
MANUFACTURING CHEMISTS AND IMPORTERS
PASSAIC, N.J.
Gentlemen:
Castor Oil for sulphonation is getting scarce. Undoubtedly, you have found it necessary to replace Sulphonated Castor Oil. Therefore, may we call to your attention several oils which have been giving excellent results:
SULPHONATED RED OIL 50%, a penetrator in dyeing and a dispersing agent.
For finishing, we recommend:
SULPHONATED CORN OIL 50%, 75%
or
SULPHONATED PEANUT OIL 50%, 75%
We should also like to suggest:
SULPHONATED OLEVENE, to replace Sulphonated Olive Oil.
MONOPOLE SOAP SOLUTION O, to replace Monopole Soap as a dyeing and penctrating agent.
Naturally, you will find it necessary to experiment with these oils. However, past performances indicate that they will give perfect satisfaction. We shall be pleased to supply you with samples.
Very truly yours,
JACQUES WOLF & CO.



Air Conditioning gives it OOMPH!

This war is being fought with *explosions*. All kinds... from block-busters to hand grenades. And don't forget the explosions in the barrels of guns that propel bullets and shells toward the enemy.

It takes a lot of skill to make a good explosion. Air conditioning helps.

The rate at which powder *dries* determines the way it explodes. It must not explode too soon or too late. Hence, special air conditioning . . . with temperature and humidity controlled precisely . . . is used for the drying of powder.

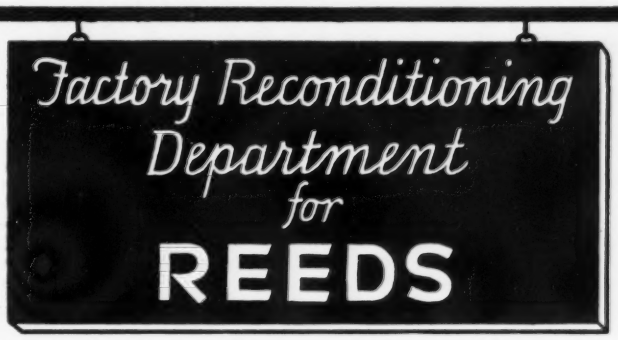
Also, air conditioning protects the lives of workers in munitions plants by providing the safest temperature and humidity conditions.

General Electric is an outstanding supplier of the new improved kind of air conditioning equipment needed for these wartime requirements. It has developed equipment more flexible, more compact than ever before . . . with more accurate temperature and humidity control.

Today this equipment is being devoted to winning the war. After the war, a far better air conditioning will be made available for offices and factories, stores and theatres; homes, hospitals and hotels . . . from General Electric.

Air Conditioning and Commercial Refrigeration Department, Division 433, General Electric Co., Bloomfield, N. J.

Air Conditioning by **GENERAL ELECTRIC**



REPAIR–RECONDITION *your* REEDS *and thereby* *Save Vital* [Man / Woman] POWER *and* MATERIAL

We strongly urge all mills having any reeds lying idle or requiring repairs to send them to us for factory repairing and reconditioning.

In order to cooperate with our Government and the mill owner, we have enlarged our various "Repair Divisions" to take on the additional work that is being sent us.

Every job entrusted to us will receive the same close attention and scientific skill as do the products we manufacture daily.

Factory Reconditioned REEDS

when done by the STEHEDCO Method are most economical, and we have plants conveniently located in Philadelphia, Pa.; Greenville, S. C.; Atlanta, Ga., and Montreal, Canada.

STEEL HEDDLE MFG. CO.

BRANCH OFFICES ALL OVER THE WORLD

Manufacturers of Superior
FLAT STEEL HEDDLES–HARNESS FRAMES–ALL TYPES OF LOOM REEDS–
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2100 W. Allegheny Avenue Philadelphia, Pa.

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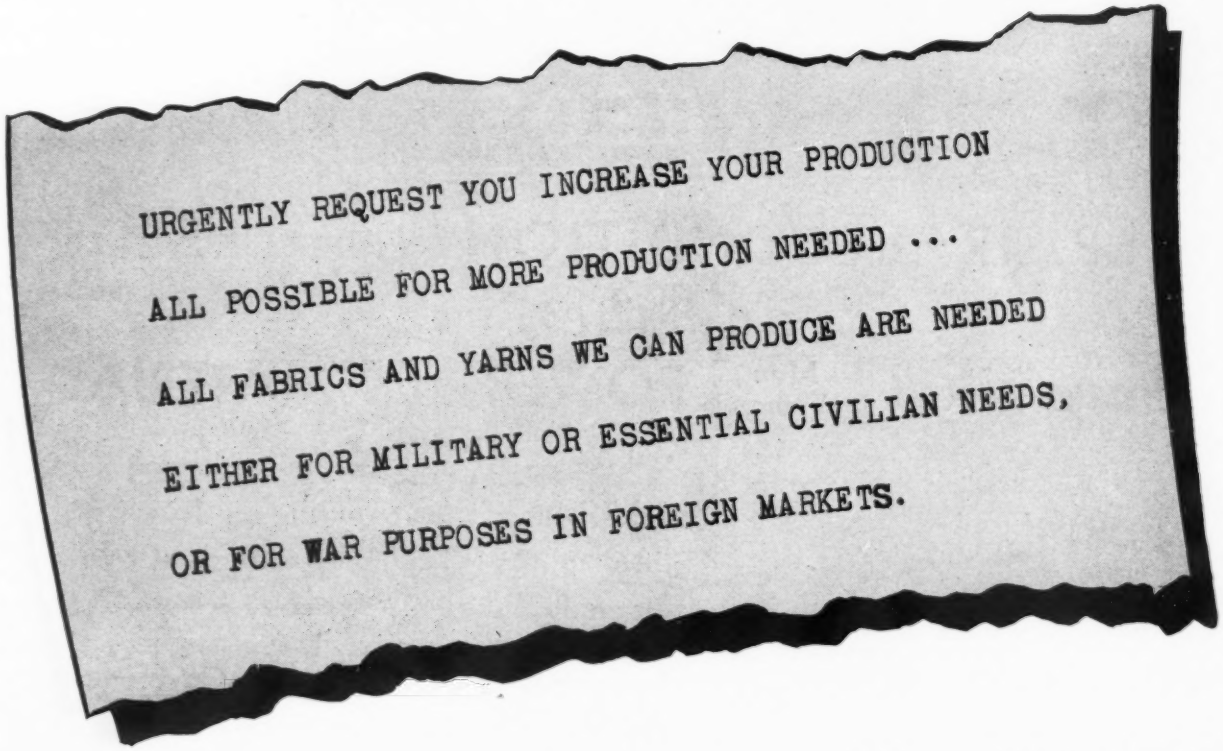
THE BEST REPAIRING FACILITIES ON THIS HEMISPHERE

A TELEGRAM FROM THE WPB . . .


URGENTLY REQUEST YOU INCREASE YOUR PRODUCTION
ALL POSSIBLE FOR MORE PRODUCTION NEEDED . . .
ALL FABRICS AND YARNS WE CAN PRODUCE ARE NEEDED
EITHER FOR MILITARY OR ESSENTIAL CIVILIAN NEEDS,
OR FOR WAR PURPOSES IN FOREIGN MARKETS.

AND AN ANSWER FROM TAYLOR

WE HAVE an idea the War Production Board was hoping for only *one* kind of answer to this telegram they recently sent to 519 textile mills:

"O.K., WPB, you can count on us!"

If you feel that way, we KNOW that Taylor Instruments can help you. Here's how:

1. Taylor Instruments on slashers definitely increase weave room efficiency.

2. On dye machines, Taylor accuracy helps assure uniform quality, thereby reducing re-dyes and rejects.

3. In size-cooking, the new Taylor Fulscope Time Schedule Controller gives you completely automatic control. You just load the kettle and push the button!

4. Cotton goods finishing operations, such as mildew-proofing and waterproofing with "Zelan," require accurately controlled temperatures in drying to obtain maximum control of the specified qualities. And "Taylor means Accuracy First!"

Your Taylor Field Engineer is anxious to tell you the whole story! Phone your nearest Taylor office, or write or wire Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.*

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ACCURACY FIRST

IN HOME AND INDUSTRY

★ ★ ★ KEEP ON BUYING ★ ★ ★
U. S. WAR SAVINGS BONDS AND STAMPS

The only Laboratory-Certified Shower-proofing Process"

IMPREGNOLE CORPORATION • 580 FIFTH AVENUE • NEW YORK

a subsidiary of Warwick Chemical Company

YOU should have a copy of the "UNBRAKO" SCREW CATALOG

Pat'd. and Patents Pending

Knurling of socket screws originated with "Unbrako" years ago.

"UNBRAKO" WELT-BAR SCREWS

Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws insure extra satisfaction in many a mill. Ask for samples of these too.

SELF-LOCKING HOLLOW SET SCREWS *with the KNURLED points*

Yes, sir! When you install "Unbrako" Self-Lockers on your looms and other machinery where there is vibration, you remove one cause of machine breakdowns. When tightened like ordinary set screws, their knurled points dig in and hold tight . . . keep gears, pulleys, sprockets and cams from working loose. That means fewer machine shutdowns . . . less maintenance . . . more and better quality goods produced.

Yet, "Unbrako" Self-Lockers can be removed easily with a wrench and used over and over again. Why not give your machinery this inexpensive protection? Order a supply today from your mill supply house or direct. But insist on getting "Unbrako" Self-Lockers—the only set screws with knurled points.

STANDARD PRESSED STEEL CO.

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TOUGH!... But Smooth in Operation...

and Ready for Action...

Toughness, plus careful smoothing, make Emmons Certified Steel Heddles best for better weaving.

High-tested tensile strength and corrosion-resistant plating mean long life, no rust, less fly. Extra polishing and streamlining of heddle eyes eliminate an important cause of costly warp breaks.

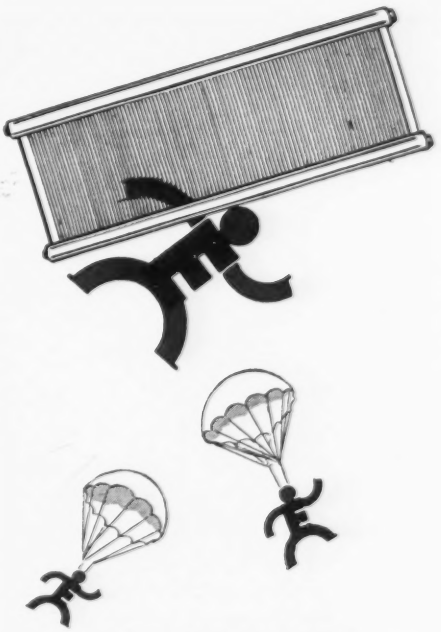
All heddles are carefully inspected—and samples are periodically tested by an independent laboratory—in order to merit the "Inspected and Approved" seal and the "Certified" tag.

You will find Emmons ready to go "all out" to give you best possible delivery. Realizing your problems, we are eager to help out — so new customers as well as old can count on our best efforts.

Be Certain... Buy Certified

EMMONS LOOM HARNESS COMPANY

Lawrence, Massachusetts . . . . Charlotte, North Carolina



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With air space up to 70%, you get freer warp movement with Emmons reeds, no roughing the yarn. Dents accurately spaced protect you against reedy cloth, rejects and seconds. Strong but resilient enough to let good knots, slubs and nits pass through without the spreading that causes streaky cloth.

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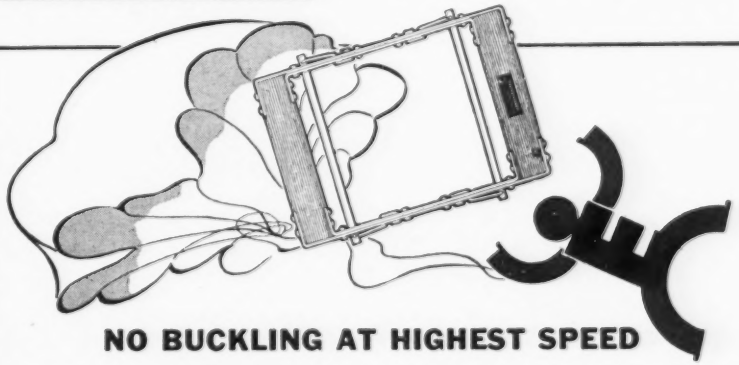
Lawrence, Mass., and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2543) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 52 Vanderbilt Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

ARGENTINA, Buenos Aires, Roberto Zander, 345 Juan Jaures; BRAZIL, Rio de Janeiro, A. Polak, Caixa Postal 362; CHILE, Valparaiso, W. L. Robinson, Casilla 1570; CUBA, Havana, J. M. Perez-Pena, Box 1611; MEXICO, Mexico City, D. F. Leo Lenk, Apartado 533; COLUMBIA, Medellin, C. E. Halaby & Co., P. O. Box 139.



NO BUCKLING AT HIGHEST SPEED

Emmons Heddle Frames are built to "take it" Extra rolled rivets, hand-picked, knotless lumber doubly shellacked, make the difference. And the new black EMMONITE finish on frame ends, a phytanium-blended *protective penetrant*, smooths metal parts, stops rust, won't crack, craze or peel off.

EMMONS

See latest TEXTILE WORLD YEARBOOK for Details on all Emmons Products.

TEXTILE BANKING COMPANY

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Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Right Dress!

AND FAST COLORS FOR WORK WEAR

WOMEN do not stop being women when they become war workers. They are still style conscious. They still want to appear at their best.

But they know that work in war plants imposes new demands on clothing. It is subject to grime, grease, perspiration and frequent launderings.

This calls for fast dyes—the fastest available. For colors must not fade noticeably during the long, hard life of the garment. Vat dyes, which can be used on cotton, rayon or linen, should be your first choice when Uncle Sam can spare them.

America's women war workers will expect fast color in tomorrow's clothing.

Build good color value into fabrics for work clothing. Use the fastest dyestuffs available. It helps conserve America's supply of suitable fabrics. And it helps you build your reputation for the increased post-war market. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyestuffs Division, Wilmington, Delaware.

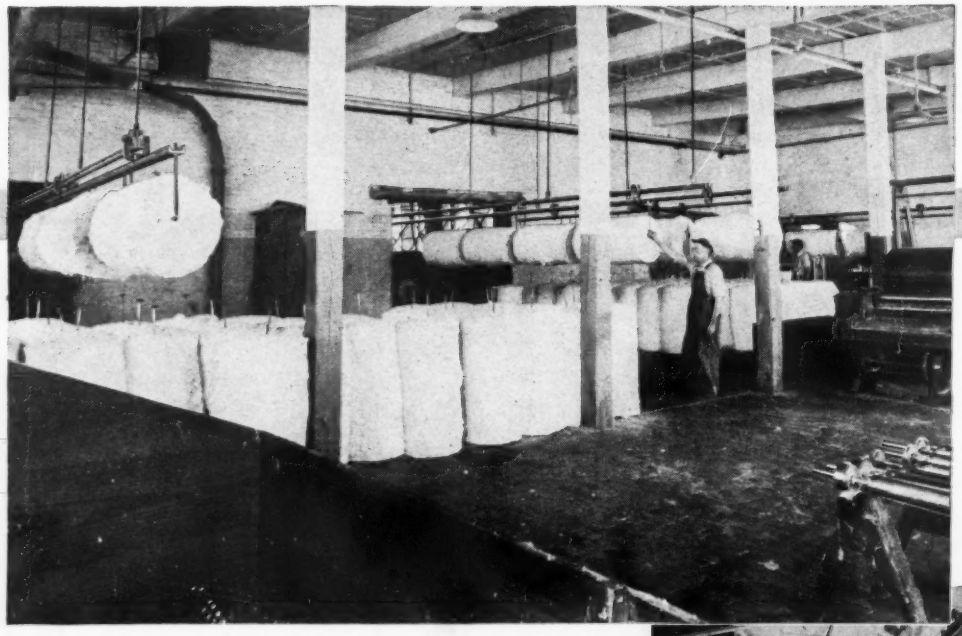
DU PONT DYESTUFFS

REG. U.S. PAT. OFF.

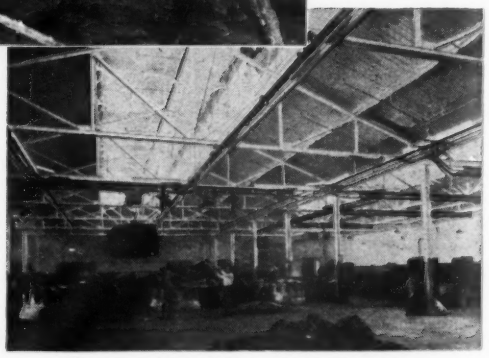
DYESTUFFS

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Utilize CEILING SPACE *and Save* FLOOR SPACE



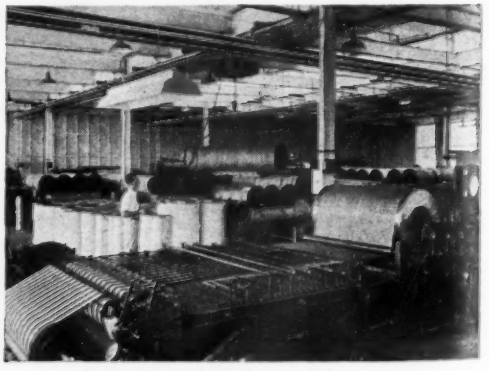
Laps move to card room on special MonoRail carriers.



Overhead handling in a dye house.

IN HUNDREDS of textile mills, from opening room to shipping room, throughout the entire process, American MonoRail equipment is eliminating congestion and damage in transit relieving men of lifting and carrying and enabling them to give full time to production. It is putting to best advantage many thousands of feet of floor space by enabling higher piling of materials, better and closer arrangement of machinery and equipment.

American MonoRail Equipment is extremely flexible. Standard parts fit quickly into complete systems to meet a wide variety of handling problems. An American MonoRail system can carry your product at the lowest possible cost and the highest possible efficiency. Our engineers will gladly show you how it can be done in your mill. Remember — overhead handling reduces handling overhead.



Cranes serve slasher and storage.

THE AMERICAN MONORAIL CO.

1310b Athens Avenue ★ Cleveland, Ohio

MARCH, 1943
Volume 107 Number 3

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Editorial and Business Offices

GRANT BUILDING
ATLANTA, GEORGIA

COTTON
SERVING THE
Textile Industries

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Because his life depends on it, every soldier must learn his fighting know-how . . . the hard way.

DAYCO TEMPERED ROLL COVERINGS
PIONEERED, ENGINEERED AND PROVED BY ACTUAL MILL SERVICE

1. Improved drafting.
2. No grooving—less ends down.
3. Unaffected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Not affected by hard ends.
9. Static free.
10. Oil resisting.
11. One-piece tubular construction.
12. Produce more uniform yarn.

But, today, there may be many attempts made to find an easy short cut to synthetic know-how. Such efforts are doomed for disappointment!

Dayton's *years of peacetime know-how* in the pioneering and development of synthetic materials for printers' rollers, tires and industrial V-Belts date back to 1926. That's the background which enabled Dayton to introduce, in 1938, Synthetic Rubber Textile Products which set new standards of durability and performance for an exacting industry.

Today, Dayton's hard won know-how in the development of synthetics for America's military and industrial needs has, during the past four years, helped the textile industry deliver greater quantities of uniform, high standard yarn while reducing down time and maintenance costs to a negligible minimum.

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HOME PLANT, TEXTILE PRODUCTS DIVISION
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The Originators and Pioneers of Dayco Tempered Roll Coverings

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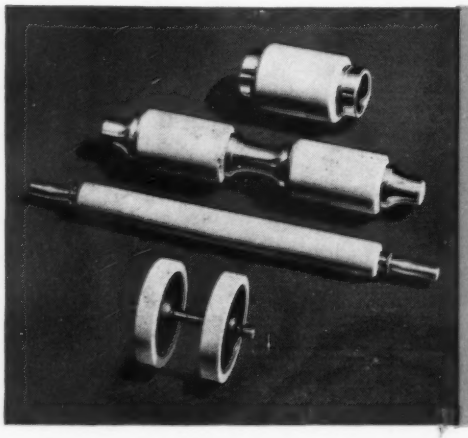
THROW YOUR SCRAP INTO THE FIGHT!
BUY WAR BONDS AND SAVINGS STAMPS



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***Thorobred* TEXTILE PRODUCTS**
Dayco TEMPERED **ROLL COVERINGS—LOOM SUPPLIES**
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright, 1943, The Dayton Rubber Manufacturing Co.

SHORTS AND REMNANTS

On Water Repellents

"I have found the article 'Water Repellent and Waterproof Finishes for Textiles' by Eric Croen most interesting. On page 64 of the January 1943 issue Mr. Croen refers to a durable type repellent which has a spray rating of 100-70-70; and I wonder if you could obtain the trade name of this product for us from Mr. Croen as we have never heard of it previously. Incidentally, the Army has already lowered its specification to include this new type. A comprehensive series of articles on the processing of coated fabrics should prove of immense value. . . . "

HERBERT ROSENBERG
American Finishing Co.
Memphis, Tenn.

"Will you kindly forward to the undersigned . . . 'Water Repellent and Waterproof Finishes for Textiles' by Eric Croen. (Dec. '42, Jan. '43) . . . "

H. W. ROSE
American Cyanamid & Chemical Corp.
New York, N. Y.

"I have read with interest your article on 'Water Repellent and Waterproof Finishes for Textiles (Article 1)', appearing in the December 1942 issue of COTTON, and would like to obtain a reprint of this article."

C. H. BAYLEY
National Research Council
Ottawa, Canada.

◆

O. K.—We'll Reprint Circular Knit Series

"I have been following the Komet and Links-and-Links articles with great interest and have found them very helpful. . . . After reading the Editor's note at the conclusion of Knitting Kinks of the January issue, I would like my name added to the list for a booklet of these articles."

DONALD S. MINGO
Lewis, Ltd.
Truro, N. S., Canada.

"With reference to notation at end of article on Komet Links-and-Links machines in the January issue of COTTON that you may reprint all the articles on Komet machine in a booklet. I am desirous of obobtaining three copies of same. . . . "

GEORGE S. WEINERTH
D. S. & W. Hosiery Co.
Reading, Pa.

"We have found your articles on the Komet machine most interesting and helpful. In your January 1943 issue you state you may reprint these in booklet form. If you do so, fixers of Penmans Limited, No. 1 Mill, Paris, Ontario, would like to secure at least six copies of these booklets. . . . "

H. F. DALE
Penmans, Limited
Paris, Ontario, Canada.

"I note at the end of Article 23 in 'Knitting Kinks' that the series are nearing completion, and if the demand is sufficient you will publish all articles in booklet form. I would like to advise that we would like to have three of these booklets. . . . "

LEONARD R. SMITH
Supt., Park Hosiery Mills, Inc.
Knoxville, Tenn.

"I would be interested in your reprinting all the Komet and Links-and-Links articles in a booklet."

WAYNE NEEDHAM
Rutledge Hosiery Mill Co.
Rutledge, Tenn.

With many letters such as these being received in response to a small notation at the conclusion of the January article in this popular series, we are definitely planning to reprint these articles and will issue definite announcement when this is completed.

◆

Handling Grievances

"Thanks very much for the copies of the article entitled 'The Handling of Grievances', which we received a few days ago. . . . Mr. McLaurine in writing these articles, and you in publishing them, are in our opinion, rendering a needed service to the textile industry."

CHARLES H. REYNOLDS
Superintendent,
Spindale Mills, Inc.
Spindale, N. C.

◆

Modern Rayon Finishing

"A copy of the six installments covering 'Modern Rayon Finishing' by Barnard and Wachter, as assembled by you, has been brought to my attention. Its value is fully recognized. . . . "

R. R. SLEEPER
Calco Chemical Division
Bound Brook, N. J.

◆

Comments on Winding Articles

The opening article of a valuable series on Winding Machines and Work Load Calculations by J. W. Stribling, presented in our January issue, called forth a number of comments such as the following:

" . . . The subject matter is well presented, and one of the few articles by machine builders or their engineers that approaches the matter of work loads from a time study angle . . . am looking forward to the continuation of the article in the next issue."

RAY BUTLER
Superintendent,
Spray Cotton Mills,
Spray, N. C.

" . . . This is a good common-sense write-up and I don't know of anybody better qualified to write this than Mr. Stribling. . . . "

L. S. HALL
Superintendent,
Goodyear Clearwater Mills
Rockmart, Ga.

" . . . It so happens that the writer, just this morning, started tests on this very subject in one of our plants and very probably this study will extend to our various other units. Judging from the first of the series, the subject will be well covered. . . . "

C. S. LINK, JR.
Avondale Mills
Sylacauga, Ala.

" . . . Read over carefully page 59 of the January issue of COTTON and consider the article a splendid piece of work. . . . The writer has a little different method of going after these winding problems. . . . You may rest assured that I will be interested in the future articles."

C. W. YOUNG
Superintendent,
Goodyear Decatur Mills
Decatur, Ala.

"I have noticed here lately that it is very difficult for me to help my high school daughters with high school mathematics. I realize that I went to school quite a number of years ago prior to the New Deal, and also realized that there had been considerable changes in the setup of the Government, particularly the Supreme Court and Congress, and also changes in dates, such as Thanksgiving, and changes in the clock time, but I hadn't realized that there had been any particular change in fundamental mathematics. Evidently I am mistaken, and I will appreciate it if you will ask the author where I can get a copy of the New Deal Mathematics where he worked out the answer to the formula on page 62."

L. R. BRUMBY
General Superintendent,
Bibb Mfg. Co.
Macon, Ga.

If Mr. Brumby's letter causes you to look up the error in the February issue he refers to, be sure to note the correction at the end of the second installment, page 88, Mar. issue.

◆

"Maintaining Motors"

". . . I believe you did a most outstanding job. I am using it as a model to point to when discussing treatment of certain material of this type in publications which we put out."

O. F. VEA
Motor Division, General Electric Co.
Schenectady, N. Y.

(Mr. Vea is referring to the manner in which we presented his article, "How to Maintain Your Motors to Keep 'Em Running", page 63, November COTTON.)

◆

Why "Slasher"?

"I am wanting to know why a slasher is called a slasher . . . where did it get this name . . .?"

W. W. COBB
Superintendent,
Norris Cotton Mills Co.
Cateechee, S. C.

(Our Editorial Department tells us they have tried for 20 years on and off unsuccessfully to determine the source of "slasher". It should be worth a whole dollar in War Savings Stamps to any reader who will enlighten us on this. In fact, we will pay that for any reasonable or accurate explanation so here's a chance for some bright reader to win cash and lasting fame.)

Also Serving The Folks at Home

This War Industry *also* delivers the goods to the folks at home. The record-breaking demands for war production have been met, fully and on time. And in addition there has been sufficient electricity for every civilian use.

Not only is electric service in your home and textile plant unrationed, but the price is as low as ever. There has been no increase either before or after the advent of price ceilings. In spite of war increases in our expenses — as in yours — electricity is still cheap.

GEORGIA POWER COMPANY

COTTON
SERVING THE
Textile Industries

Vol. 107 March 1943 No. 3

The Post-War Planners

A GREAT DEAL has been written and a great deal more said about our post-war plans, or lack of them. It seems that what we need most are some clearly defined policies upon which plans can later be based, because any plans which are not based upon policies acceptable to the peoples affected will be quite worthless for anything but a cause of irritation. Plans can be drawn by governments and may be agreed to by governments, but if these plans are contrary to the interests of the peoples affected, they are not helpful, cannot be permanent, and are certain to cause a great deal of international ill will.

Any post-war planning has naturally got to fall into two general classifications; domestic and foreign. Our principal concern has always been with our domestic policy, and our foreign policy, when we had any, has been hitched to our domestic policy. With most countries it has been the other way around: their domestic plans have had to be adjusted to the necessities of foreign policy. A nation surrounded by powerful, and often aggressive, neighbors, has had to make its domestic affairs conform to the exigencies of the foreign policy.

Our country has practically never had any foreign policy in the sense that Britain or France or Germany has been obliged to have one. Our principal foreign policy has been that we wanted to be bothered as little as possible by, and with, the rest of the world. It was this long established feeling on the part of the American people that caused Mr. Wilson's plans to fall through after the last war. Mr. Wilson had a very carefully drawn and rather complete set of post-war plans, and perhaps if the American people had supported these plans, there would be no world war today. These plans, however, ran counter to profound convictions in the minds of most Americans, and they refused to support them.

There does not seem now to be any clearly defined post-war foreign policy about which the American people can be making up their minds. When this war is over, are we going to help preserve peace throughout the world? Are we going to be willing to help police a world which has been breaking out in wars since there have been any people to fight? Are we going to do like we did last time and wash our hands of all responsibility for international affairs until another war breaks out, or are we going to be willing to participate in international affairs to an extent sufficient to keep another war from breaking out? Another war, with the military improvements of the next 25 years, would probably leave nothing but world-wide ruin. Still, there is no certainty that the American public is going to be willing to sustain the continued burden of maintaining, or trying to maintain, peace. The implementation of a foreign policy calculated to maintain world-wide peace is going to entail grievous domestic sacrifices, and when the war is over, the American public may not be in a sacrificial mood.

THE SO-CALLED United Nations may find after the war that this union was merely one of temporary military convenience, and they may not be willing to co-operate economically to head off the causes of future wars. Most international difficulties have arisen over economic problems and most wars have been fought to obtain certain commercial and economic advantages or privileges. Unless the United Nations can remain united in purpose after the war, they will soon be scrapping amongst themselves over dislocations caused by economic pressures. If world-wide peace is to be maintained, there must be an international policy permitting all nations more or less equal economic opportunities. If the United Nations try to maintain peace forcibly by organizing a police force which can go around and punish small countries at will, these United Nations will soon earn the cordial hatred of the rest of the world and create an atmosphere anything but peaceful. There are going to be many causes of dissent among the United Nations themselves.

ONE OF THE chief causes is going to be the matter of post-war air traffic. For several centuries the British Empire has controlled a very large portion of the world's surface and population and commerce because it controlled the oceans. When this war is over, control of the oceans may soon be no more important than control of the air. In a few years it may be that air control is even more important than the control of ocean borne commerce. When the war is over, the United States and Britain will be provided with almost incredible facilities for turning out aircraft, and it is an absolute certainty that air transports of ever-increasing size are going to be shuttling back and forth with ever-increasing frequency all over the world. The question of the policy of the United States with regard to post-war air routes and air control is going to be as impor-

tant as anything else connected with the war. This may become the one big outstanding post-war problem.

We have as yet reached no definite agreement of policy regarding the post-war European set-up. The nearest approach to a generally-accepted policy on this important subject is the avowed determination on the part of ourselves, Britain and Russia to see that some arrangements are made permanently to prevent the recurrence of a world-wide war. It seems likely that if we bring the war to a successful conclusion, none of the Axis nations is going to be allowed to build any aircraft or to operate any airlines, except perhaps for limited domestic service with planes purchased from one of the United Nations and so designed that they cannot be converted successfully to military purposes. Such a policy would definitely leave the United States, Britain and Russia to divide up the airline privileges of the world between them, and if air commerce develops as rapidly and extensively as we have reason to think that it will develop, this situation provides the opportunity for a lot of spirited and bitter scrapping between the United Nations. Conceivably, some future world war might be waged to determine who is going to have a monopoly of the airways of the earth, or at least if not a monopoly, who is going to control these airways in the same sense that Britain has controlled the seaways for so many generations. It seems to us that this is a problem fully as grave as the problem of seaway control, and that if some definite policy with respect to this problem is not formulated by the United Nations during the war, they may easily fall out among themselves after the war trying to settle this very important question.

IF THE United Nations are to remain united, they will probably have to establish something approximating free trade among themselves, and there is a great deal of talk about tearing down tariff barriers and instituting free trade throughout the world. Will the American people agree to this? If a cotton mill can buy post-war Brazilian cotton for seven cents a pound, how will the American cotton farmer feel on the subject of free trade? Since our imports of foreign oils and oil-producing materials have been cut off, we have encouraged our farmers to plant enormous quantities of soy beans, peanuts and other crops usually not grown so extensively in the United States. When the war is over, will the peanut farmer be willing to take $35.00 or $40.00 a ton for his product, which is now fetching $175 a ton? When the war is over, millions of skilled workers who still survive in Europe are going to be so desperately hard up and so thoroughly destitute that they will be willing to work for a mere pittance to obtain food and clothing. To get this food, and the material from which to make the clothing, they must ship their manufactured goods abroad again as they have done in the past, and will the American mill worker be willing to compete with the textile worker in Europe or what is left of Japan? Our textile workers have not been willing in the past to compete with the low cost labor in Europe and Japan, and they may not be willing to do this after the war.

Before the war there was a huge shoe manufacturing industry in Europe which could under-sell American manufacturers, even with a fairly substantial tariff. Will the American shoe workers be willing to compete with those of Europe after the war? If we are going in for free trade, we are going to have to face the fact that we must either compete or go out of business, and that whole industries in the United States must either go on a subsistence basis or go out of existence. The lessons of this war are teaching us that any nation without a well-rounded domestic economy is inviting disaster. A nation which depends entirely on other nations to supply it with some of the necessities of life is in no position to protect itself in time of war.

Of course, some post-war planners contend that there will never be another war. Maybe not, but then maybe there will, and if there is we will certainly need to be in a position to win it. It would be not only ridiculous, but highly imprudent for this country to adopt any foreign trade policy which would result in extinguishing any of our domestic industries which are necessary to a well-rounded national economy. It is quite likely that a considerable amount of alteration in our protective tariff structure is needed. We have no doubt overdone this idea of tariff protection in many instances, but it is very difficult for us to think for a moment that the American people could ever adopt the principle of free trade unless this war lasts long enough to get this country just as flat as the rest of the world. If the war is strung out until this country becomes absolutely bankrupt and exhausts all of its accumulated wealth and is in just about as desperate economic shape as Europe, then maybe we could have free trade and be happy with it, but a textile worker or shoe worker or mechanic who has been accustomed to owning his own automobile and eating meat when he felt like it, is not going to put himself willingly on the economic level of the worker who is lucky to own his own shoes and count on a loaf of black bread or a few potatoes.

WE ARE most acutely in need of formulating a definite domestic labor policy. We are rapidly approaching the point where every job in the United States is going to be the property of some labor union, so that it will be impossible for any working man or woman to get a job except through the permission of some union. When the war ends there will be several million war workers out of employment, and most of these workers will belong to unions, and presumably control them and also presumably violently object to seeing jobs given to returning soldiers and sailors when there is a shortage of work for these people who are already in control of the unions and therefore in control of employment. As matters now stand, there will be in a few years no such thing as freedom of employment or freedom to work.

It has been the history of labor unions that they always regard wage rises due to boom times as legitimate social gains, and that when the booms are over,

(*Continued on page* 76)

Compania Textilera Ariguanabo, S. A.

Modern Textile Plant in Cuba Now Doubling Its Capacity

By Arthur R. Connor

IN THE early 1930s, Dayton Hedges, a native of Long Island, U. S. A., who had settled in Cuba, began the establishment of a textile mill —known as Compania Textilera Ariguanabo, S. A.—near Havana. Started first as a weaving mill, it later installed spinning equipment, and now is engaged in erecting and equipping another unit of 50,000 spindles and 816 looms, which will practically double the previous capacity.

Just a year ago, Arthur R. Connor, who had been connected with Danvers Bleachery, Peabody, Mass., as assistant dyer and in charge of wet finishing, went to Cuba to take charge of the finishing departments of Ariguanabo. We gave him a year to get oriented, and now present the following interesting description of textile manufacturing in Cuba which he has prepared for us . . . . . .

AS FEBRUARY marks my first year here with Ariguanabo, the language and customs that seemed so strange at first are slowly disappearing, and as the saying goes in the tropics, I expect to "go native" most any time. Practically in the shadow of the States, Cuba has adhered to its old Spanish customs more or less, although Havana is very cosmopolitan.

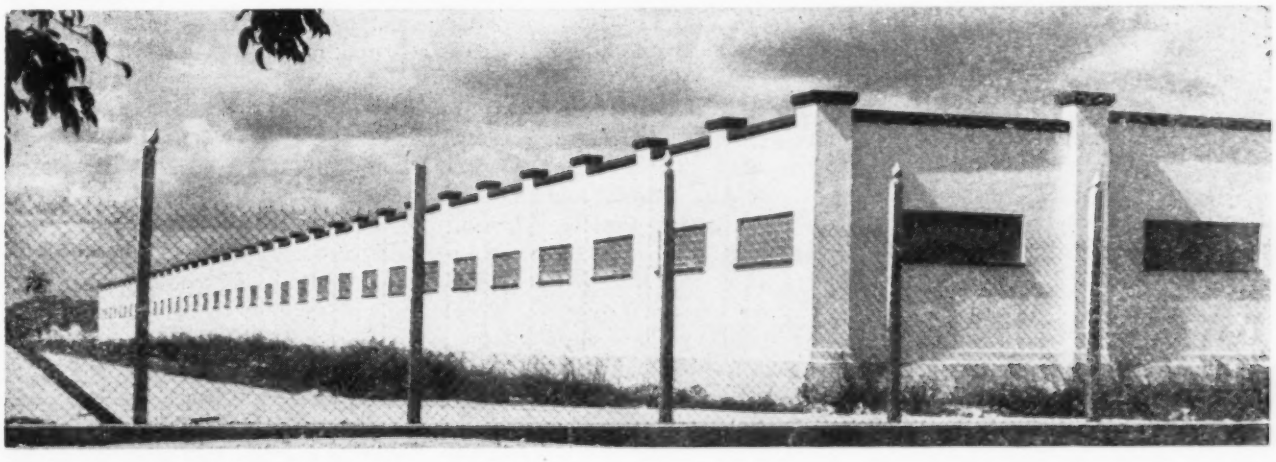
My wife and I have found living conditions here good but prices have been rather high recently, especially if one buys all American foods. The summer months here are very hot, and as we originally came from a rather cool climate it has taken us until recently to get accustomed to the weather. We have found the Cuban people very kind and courteous, and they think highly of Americans; in fact, very little goes on in the States that the average Cuban does not know about.

As far as rationing is concerned, sugar and coffee are plentiful but many other foods which were imported before the war are impossible to get. The gasoline supply is practically exhausted. However, a synthetic fuel made of alcohol, which is working out very well, is now being produced. As alcohol is a very common product of the large sugar mills here on the island, I believe it will take the place of gasoline as a fuel in the future. Of course, there is much research and many improvements to be made regarding this new fuel, but the present situation has speeded developments up tremendously.

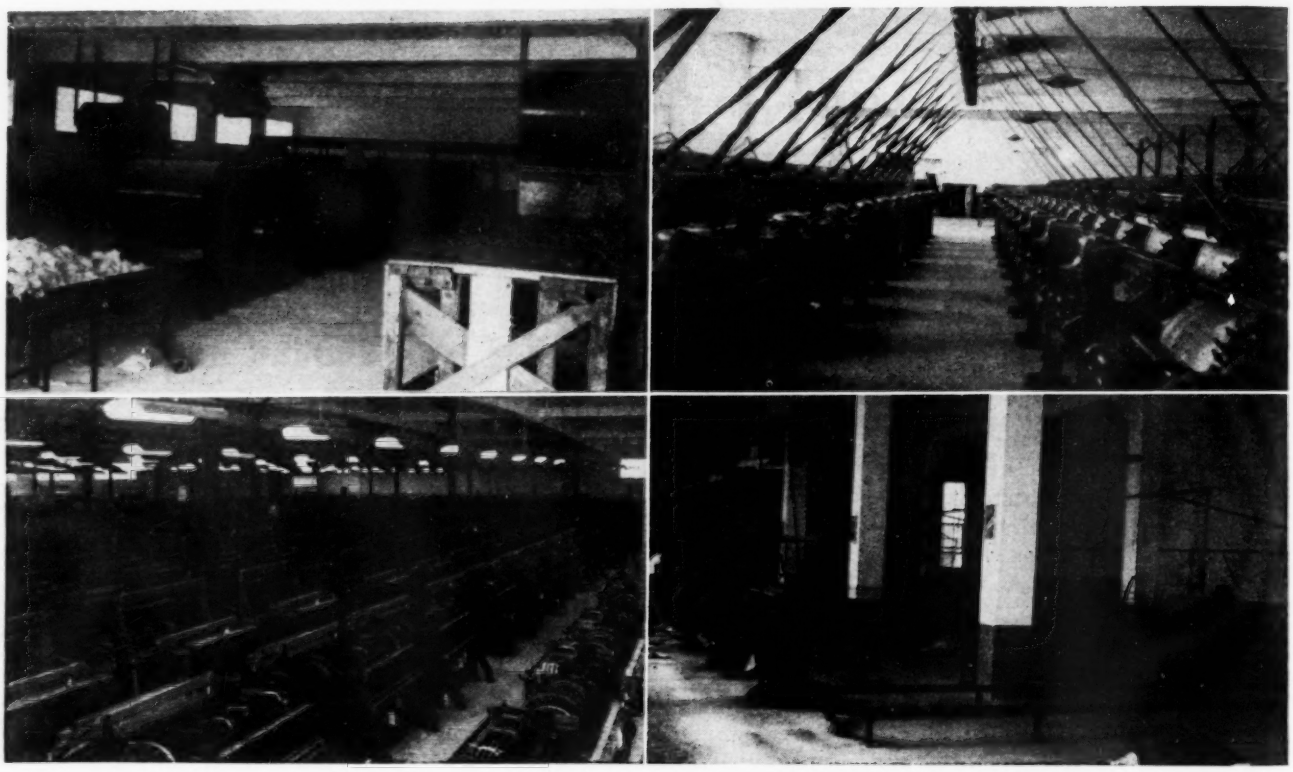
The main industries here on the island are sugar and tobacco, and some of the best tobacco grown in Cuba is raised right here in the vast fields surrounding our textile plant. Of course sugar is booming at the present time. The only means of travel to and from the island today is by air, and after the war Cuba will undoubtedly be just a stop-over between the Americas.

Working Conditions

It is Ariguanabo's policy to buy all cotton from the United States, as Cuba to date does not grow it. At the present time the mill employs 1,400 Cubans. Cuba's labor laws are quite a lot like the South American labor laws although there is one particular law which impresses me very much and that is: "No man may be discharged except the executives of a company."



An exterior view of the new unit of the Ariguanabo mill in Cuba. Note one-story construction and glass brick



Four interior views in the Ariguanabo mill. Top, left, the new picker room. Top, right, a part of the cards. Bottom, some of the new looms, and a view in the beaming room in the older mill . . . . . .

The workers are entitled to a month's vacation with pay out of each year, or if they prefer, two week's vacation with pay out of every six months. As we work four six-hour shifts, we are not bothered with the well known "siestas". The workers are unionized and have an independent union free of the larger unions, and aside from a sympathy strike in 1933, Ariguanabo has had no labor difficulties which, for this country, is remarkable. This speaks for itself in showing that the management is very fair and that there is very good cooperation between employer and employee. About 30 per cent of the workers here are women. They are all attired in blue denim overalls which makes them look very neat and trim and I think is a very good idea as far as women workers in a mill are concerned. Ariguanabo's owner, Mr. Dayton Hedges, introduced the maternity policy which today has become a permanent law throughout Cuba.

Mill Equipment Details

Founded in 1930, Ariguanabo has grown to be one of the most modern mills in the Americas. One's first impression on arriving here is that he is approaching a large rancho rather than a large textile mill due to the extensive agricultural surroundings. All buildings are of steel and concrete construction, having only one story as a precaution against the cyclones that are prevalent in Cuba.

At the present time, the mill houses approximately 33,000 spindles and 924 looms. All of the textile machinery is of American manufacture and is up-to-date in every detail. Both the spinning and weaving rooms are equipped with humidifiers. The variation in humidity here is between 35 and 95 per cent within a very few hours, although the average humidity is between 80 and 85 per cent. When the mill was first completed it did not have artificial humidification. However, when it was installed, the workers appointed a committee to ask the manager that they be supplied with rubber coats, hats and boots as they believed it would be injurious to their health. When they finally recognized that their production was picking up with no harmful effects on them, the idea of the rubber outfits was soon forgotten.

All buildings are connected and the office occupies the entire front of the finishing plant. This includes the employment office, a large room devoted to bookkeeping, accounting and general office work, three large private executive offices and a research laboratory. The main office and storehouse of the company are located in Havana. The mill itself is located about 22 miles from Havana.

Opposite the mill office, in a separate building, is the clinic. Here two doctors, several nurses and technicians are in attendance at all times. The clinic also maintains a dentist's office, medical laboratory and x-ray room. And in the future, I understand, a hospital is being planned which will replace the present clinic.

Last year Ariguanabo produced approximately 6,500,000 pounds of cotton cloth. This included soisette, poplin, denim, chambray, wide sheeting, and an 8-ounce duck which is used extensively for shoes, and a drill which is used for the uniforms of bus drivers, street car conductors, etc. As there were no experienced mill workers here when Ariguanabo started, it was necessary to use the men who had previously worked in the fields and train

them for the different positions. Today the mill has numbers of skilled textile workers.

Living Conditions

Living conditions for the workmen here are perhaps the best on the entire island. Riding along the Central Highway one notices the difference immediately on arriving at Bauta, which is the nearest town to the mill and where most of the workers live. Here the people seem better dressed and everything in general has a more prosperous aspect. The workers, this month, received an additional 5 per cent raise. The company sponsors a large modern club house where a worker may live gratis except for a fee of $1.50 a month which takes care of the cleaning of his room. The company is now enlarging this building to twice its original size. Here a worker enjoys all modern conveniences under a very homelike atmosphere.

Near the mill there is a cafeteria, open 24 hours a day, where the workers, for about $3.00 a week, may eat exceptionally well. A baseball diamond is also being completed in the middle of the village where the Ariguanabo team will now be able to play its home games. This diamond is being constructed under the direction of our engineers and will perhaps be a better diamond than the one in Tropical Park in Havana. The company also publishes for its workers a monthly magazine, "Ariguanabo", which covers all of the social and business events for the month. This magazine is edited entirely by the workers themselves.

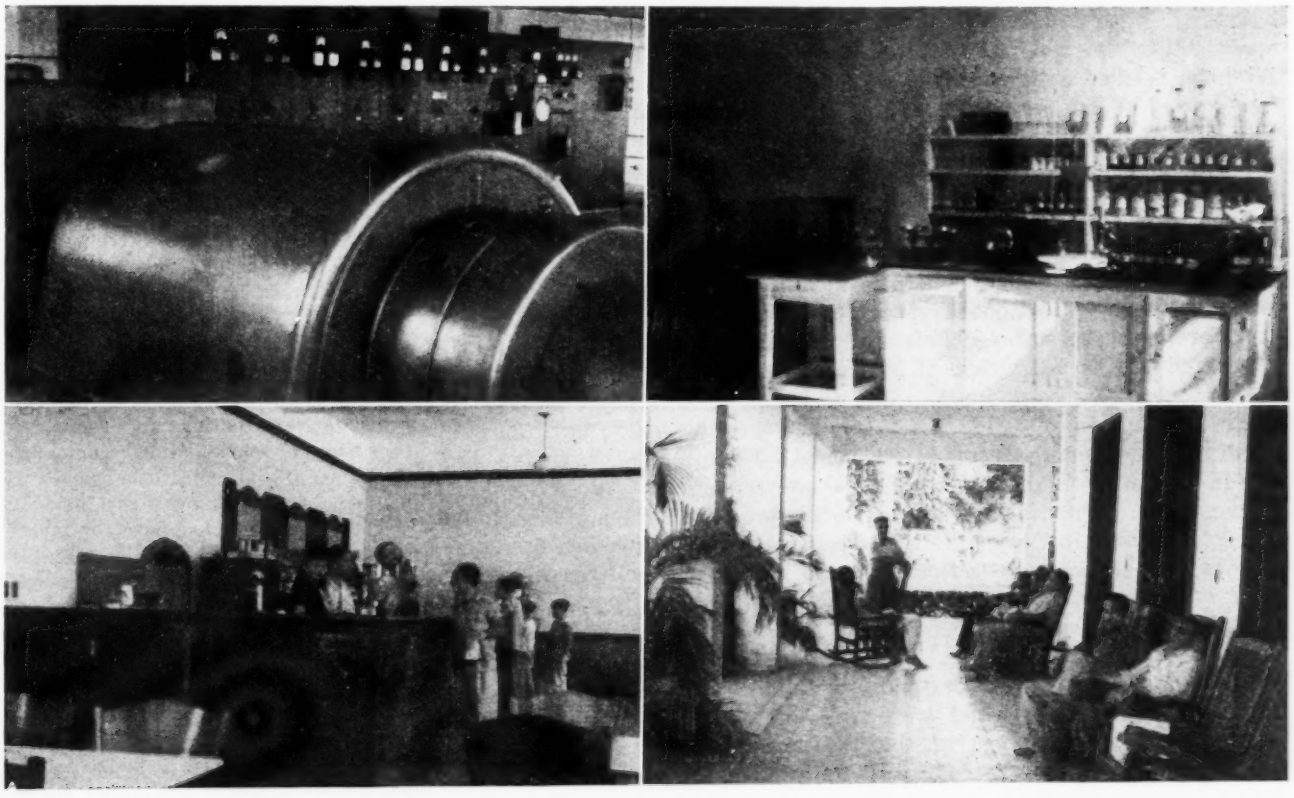
New Mill Under Way

At the present writing Ariguanabo is completing the construction of its new mill, which will house approximately 50,000 spindles and 816 looms. The construction is about the same as the other buildings—one-story, steel and concrete construction, but, unlike the other buildings, will have fluorescent lighting throughout. It will also be air-conditioned which will regulate the humidity and eliminate the humidifiers. The new power plant which was completed this past summer has a General Electric alternating current turbine with 3500 kw maximum capacity. The boilers are oil-burning with a maximum of 55,000 pounds of steam per hour which is of the superheated type with 700 degrees Fahrenheit and carries 450 working pounds of pressure. This new power house is so planned that in the future another turbine will be installed which will be a duplicate of the one described.

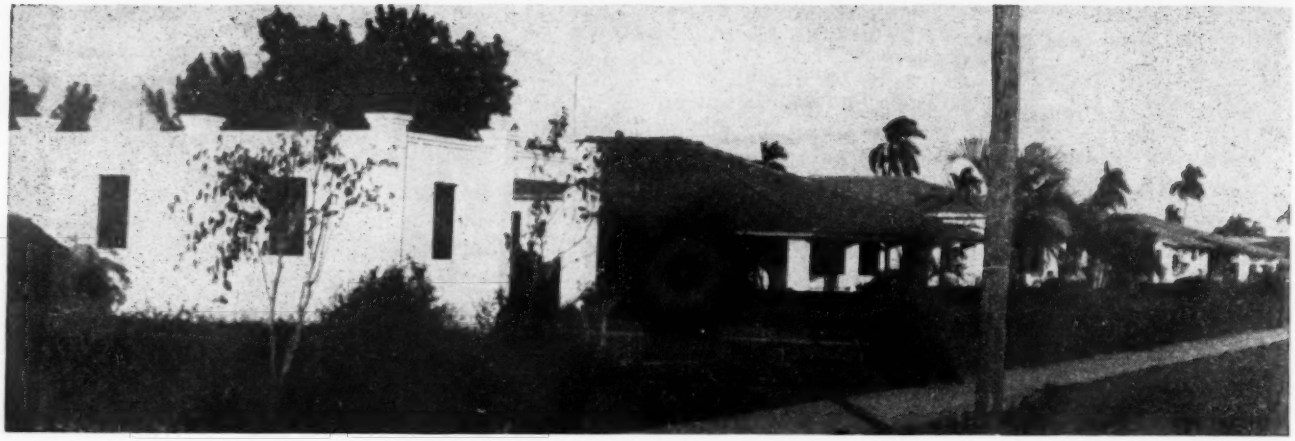
Spinning and weaving operations are in different buildings and under different supervision. All of the spinning machinery in both old and new mills is of the latest type Whitin, with long draft roving. Those machines not having the long draft roving process in the old mill are now being converted.

Our finest yarns are 40s and the coarsest are 8s. We are now using a Yucca starch for sizing which is taken from the Yucca plant grown here in Cuba and in some respects is very much like corn starch.

All of the opening and picking machines are Whitin, equipped with safety devices. The pickers in the new mill will all have return air condensers. Our cards are 40-inch Whitin in group drives of 22. All looms are Draper; in the old mill we have two types, Model E and Model X. The new mill will be



More views of Ariguanabo. Top left, the turbine and control board. Top right, a corner of the laboratory. Bottom, left, the grill in the restaurant, and, right, the porch of the employees' clubhouse . . . . . .



A row of workers' homes at the Ariguanabo mill

equipped with Model X2 and Model XL types. Except for 100 wide looms, all the others are narrow. Our slashers are all steam two-cylinder type, Saco-Lowell and Cocker. The warping machinery is Saco-Lowell; slubbers and intermediates are individual drive Whitin.

The Dyeing-Finishing Department

At the present time we are doing all chlorine bleaching using pressure kiers and slack loop washers. Except for one or two foreign machines, all of the equipment in the bleaching, finishing and dyeing was manufactured in the United States. We have a large indigo warp dyeing machine for our chambrays. The bulk of our dyeing is all padder work and in the bleaching, dyeing and finishing departments methods run along the same lines as those used in the States.

Water, although very plentiful, is also of a very hard quality and therefore must be softened before using and this is taken care of by our water softening system. In the finishing plant there are five sets of dry cans, ranging from 45 to 120 inches in width, one hot tenter frame, one mercerizing machine which is now being installed and not yet in operation, one wide combination water and starch mangle, two hydraulic five-roll calenders and one three-roll calender. The dyehouse has six narrow jigs and three dye pads, two of which were recently installed and are of the very latest design. The narrow pad has a speed of 150 yards per minute and also has a micromatic set of 12,000 pounds if desired. Our soisettes are all back-filled and all others are pure starch mix. Regarding the content of calcium carbonate in the water, we draw enough of this from our water softening tanks to keep all mill buildings painted. This makes a very good outside covering which dries out to a pure white and lasts about one year. From the water softening plant that takes care of the boilers in the power plant, we draw off several hundred gallons weekly.

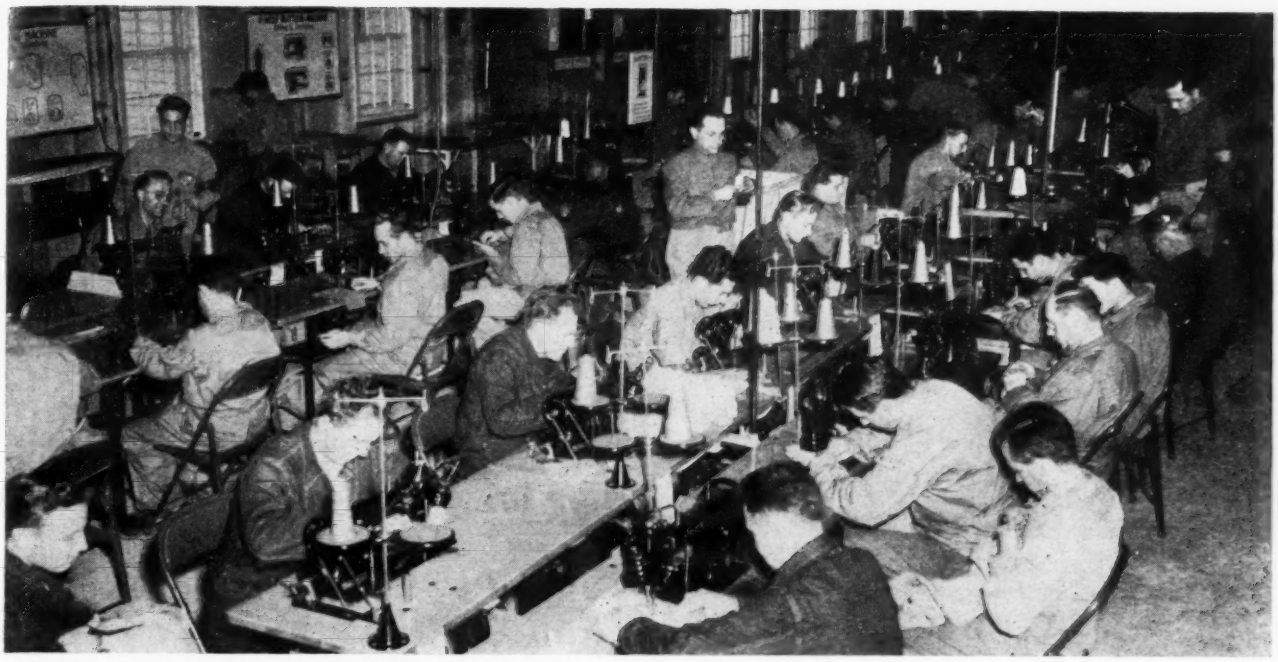
The maintenance department here is quite remarkable. Of course, at the present time it is impossible for us to get replacements so when break-downs occur parts have to be either made here or welded. I have seen a 10-inch gear stripped and inside of six hours the teeth have been welded back, re-cut and the machine running again. The petroleum supply here is very bad and this situation necessitated the changing of the boilers from oil to asphalt (there are many large deposits of asphalt in Cuba). This job of converting the boilers, which are oil-burning, to asphalt had to be done by our mechanical department. They made a grinder and blower which ran very satisfactorily during the emergency. This in itself was quite a job because, as I said before, the boilers are of the oil-burning type.

Situated in Cathedral Square, in the old section of Havana, is the main office and storehouse, which is one of the oldest buildings in this section. Here the cloth is trucked daily from the mill which is about 22 miles from Havana and then distributed among Ariguanabo's many customers throughout the island. All business transactions are handled through this office. Besides Mr. Hedges, the owner, and his two sons, James and Burke, president and vice-president respectively, there are only four other Americans connected with the company.

Although Cuba has the reputation of being a "manana" country, one sees few signs of it here at the mill. Here the plant is run very efficiently and although the Cuban worker is not rated as highly as the American worker, Ariguanabo has set a new standard for Cuba. As the buildings and equipment are very modern, I believe I can safely say that in these respects it is far ahead of most mills in the States.

ASTM Standards on Soaps, Etc.

American Society for Testing Materials, 260 South Broad Street, Philadelphia, Pa., has published a 140-page compilation of all the specifications, methods of analysis and definitions developed for soaps and other detergents by Committee D-12 of the society. The committee, with leading technologists representing producers and consumers of soaps and detergents, has developed 15 specifications and two methods of analysis for soaps and soap products; seven purchase specifications; and four analytical methods for special detergents. The specifications for soap cover bar, chip, powdered, salt water, solid, toilet, and other kinds of soap, while other standardized specifications apply to the following detergents: soda ash, caustic soda, metasilicate sodium, trisodium phosphate, and others. There are included in the publication proposed methods of analysis of industrial metal cleaning compositions, and an extensive annotated bibliography on aluminum cleaning.



A general view of the reclamation shop, clothing and textile section, of Camp Lee's Quartermaster Replacement Training Center. Trainees are shown at various lines of machines at which they practice what the instructors have taught them in lectures

Salvage Lessons a Mill May Learn from the Army

By 1st Lieut. Paul K. McKenney, Jr.
Reclamation Shop, Clothing and Textile Section,
Quartermaster Replacement Training Center, Camp Lee, Va.

THERE WAS a day when the word "salvage" was foreign around textile mills of the country; on the other hand, "waste" was quite common. Percentages of waste were figured weekly, estimated waste in production calculated, time waste carefully watched, until "waste" became an accepted member in the family of mill necessities.

Since the present emergency arose, however, "something new has been added". Necessary in every mill today is the saving of machine parts, supplies, raw materials. Salvage, from the Latin word *salvare*, meaning "to save", is coming into the spotlight now; so why not stop working entirely on "waste" calculations, and approach the matter instead from the "salvage" angle? Create your own Salvage Department for reclamation of raw materials, repair of machine parts, salvage of supplies. Calculate your "savings", instead of your waste.

Foremost among the Quartermaster operations in the field is that of salvaging clothing, equipment, machinery, field pieces, tanks, trucks, and many sundry items of both our troops and the enemy.

In the reclamation shop, clothing and textile section, of the Quartermaster Replacement Training Center, Camp Lee, Virginia, training of men for assignment in a Quartermaster Salvage Repair Company (semi-mobile) is closely co-ordinated with the repair of clothing and individual equipment of a large majority of the posts, camps, and stations in Virginia. As high as 40,000 items are returned to serviceable condition monthly by this process.

Each day the Tally In—Tally Out Section, which is comparable to a plant's receiving and shipping department, accepts unserviceable items such as shirts, trousers, service coats, overcoats, field jackets, blankets, comforters, mattresses, pillows, mosquito bars, sheets, underwear, and even socks. These are checked in, inspected, and assigned for repair to the trainees. Only skilled operators, trained in the shop, work on the more complicated repairs and ac-

1st Lieut. Paul K. McKenney, Jr., (left) the author of this article, is on the instructional staff of the clothing and textile repair school of Camp Lee's Quartermaster Replacement Training Center, whose work he describes here. Before entering the army he was connected with the Swift Mfg. Co., Columbus, Ga., of which his father is president.

Major W. N. Talkes (right) is head of the school at the replacement center, the largest camp training Quartermaster specialists in the country.

Trainees at Camp Lee are sometimes called upon to perform special jobs. Here trainees are shown performing one of the operations in the process of converting discarded World War I overcoats into modern World War II mackinaws

complish results such as an experienced civilian tailor would have difficulty in duplicating.

Remnants and scraps are used to good advantage for patches and replacement of parts such as sleeves, pockets, legs, etc.; and often a garment damaged beyond repair is ripped apart and its component parts which are not defective are utilized in repairing another garment.

Probably the most unusual salvage operation accomplished in the Reclamation Shop has been the conversion of the old 1917 model overcoat worn during the last war into a modern, well-fitting mackinaw. This means changing the square collar to a round, roll collar; cutting off the bottom and hemming; changing all buttons. Every piece cut from the old coat is utilized in the conversion and the finished mackinaw has the appearance and serviceability of a newly tailored garment.

Important also in the activities of this shop is its training program. Enlisted men of this replacement training center who have come from all walks of life are trained as skilled sewing machine operators or tailors for repair, or salvage, operations on clothing and textile items in a field unit. With the scarcity of labor for mills, instructional policies such as are followed here could profitably be used in the training programs of all mills seeking to develop its own skilled workers.

On the first day a trainee is enrolled in the clothing and textile school, he is given a sincere welcome to our shop, introduced to the officers and enlisted instructors, and, in general, is made to feel that we want his period with us to be pleasant as well as profitable to him during his Army career, and later in civilian life. An orientation lecture acquaints him with his surroundings, shop procedure, rules and regulations, and covers the purpose and scope of the training he is to receive. Additional lectures, explanations, demonstrations, and discussion cover the operation of the sewing machine and repair methods used by the Army and their use in a Quartermaster salvage repair company (semi-mobile).

Following the lecture week practical application is begun, under close supervision of an instructor, with each trainee at an individual machine. He practices all the operations and repair methods he has learned until his ability is such as to justify advancement. No attempt is made to rush the student or to hold back a progressive student with those slower to learn. As much individual attention as is possible is given each student until his ability develops, and his judgment and personal initiative are such as to justify his work on the production lines.

Realizing that production today is foremost in everyone's mind, it may seem incredible that it is to be relegated to an unimportant position during the training period. Experience has proven, however, that production is *actually greater* when more attention is spent in training during the student's first contact with his machine than when he is given a few simple explanations and is "turned loose" on production work. This fact has resulted in the establishment in this shop of a definite policy of thorough training of each student before he is allowed to do production work. This principle might well be adopted into the training policies of the mills of our country.

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Staple Fiber Rayon Yarn in Incandescent Mantles

Successful application of "Avisco", the high-tenacity viscose rayon staple fiber manufactured by the American Viscose Corporation, for use in incandescent mantles for kerosene lamps has been announced by the company. The staple fiber is employed for this purpose in the form of spun rayon yarn. For over a decade, continuous filament viscose rayon yarn has been used in such mantles, but the increasing shortage of ramie and other natural fibers also used in these mantles led to investigation of possible replacement materials. Experimental work with "Avisco" spun rayon yarns, showed them eminently suitable for the purpose and in addition showed that their use would make possible the refinement of existing mantle products. The characteristic of these yarns, it was determined, improved the ceramic structure of incandescent mantles and enabled them to throw a more even light.

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Georgia Tech Textile Graduates

At the commencement exercises at the Georgia School of Technology in February, seven students were graduated with the degree of B. S. in Textile Engineering at the A. French Textile School. These were: M. W. Arkin, Savannah, Ga.; G. P. Cleveland, Spartanburg, S. C.; D. M. Edwards, Lake City, Fla.; P. M. Platzman, Brooklyn, N. Y.; H. G. Popkin, Augusta, Ga.; J. E. Scott, Jr., Atlanta, Ga.; E. A. Taylor, Jr., Macon, Ga.

Mr. Arkin was awarded the medal of the National Association of Cotton Manufacturers for the highest scholastic record made by a senior in textile engineering.

Personality in Industrial Relations

By W. M. McLaurine

Secretary-Treasurer, American Cotton Manufacturers Association

THERE ARE millions of people with some kind of personality but there are only a few who have dominating and constructive personalities. These dominant personalities are the leaders who direct the people up or down, into safety or disaster.

Hawthorne, in his "Great Stone Face", records the community's awaiting a great leader whose likeness would resemble the clear-cut marble outline of the majestic and sublime face on the peak of the Green Mountains overlooking the town. This silent yet powerful influence preyed upon the life of a young lad named Earnest as he studied it from day to day until finally he grew to manhood and discovered that he was the awaited leader.

This story powerfully portrays the silent influence of personality on the people who come under its spell. All great changes in life have been effected by leading personalities. These people have had the power to impart, to inspire and to cause people to act. They have saturated the minds and hearts of their people with their burning zeal.

Our militarists tell us that in the abstract when we proclaim our patriotic and national devotions, we are under the spell of some personality who is r e c o u n t i n g the thoughts and valorous deeds of some one or more personalities.

On the battlefield, the army takes its cue from its leaders and becomes brave and daring, or frightened and weak in its attack. Lee and Grant, Pershing and Foch, MacArthur and Eisenhower and dozens of other names could be called whose personalities stir the military emotions and urge the soldiers to action.

To step away from the patriotic field and into one more commonplace, it is said that in the West where they have what are called "Hog Calling Contests," a man is not judged by the power of his voice alone but by the appeal that the voice has. Even hogs recognize the voice of appeal and will respond more rapidly than when there is only volume.

Too few men who are in directive industrial positions or jobs realize that their men are largely a reaction of the supervisory influence. They attribute to themselves all of the superior virtues and to their workers the inferior virtues. The old adage that an institution or a group is but the shadow of its leader is so true that we will not believe it. Our own children reflect to us our strengths and weaknesses. Our personalities influence for evil as well as for good.

Examine your own home if you are nervous and irritable; if you are careless and indifferent; if you procrastinate or find fault, you will get these reactions from your children.

Most of your supervisory troubles lie within your own personal self and must be cured from that starting place.

The following story is old but it is still good and applies here with peculiar fitness.

Back in the covered-wagon days, a family was moving from Missouri to Texas. As they drove along the torturous road through Arkansas, the man stopped his team under a tree by the side of the road to rest. A local farmer was sitting on the fence, so a conversation started. When it developed that the mover was going to Texas, the local farmer said he had been in that state. So the traveler asked:

"What kind of people live in Texas?" The local farmer replied by asking, "What kind of people live back in Missouri, where you come from?" The traveler replied, "The meanest and sorriest people I ever saw and that is why I am moving." The local farmer then replied, "You'll find that kind of people living in Texas."

Later on another family from Missouri came by and met the same farmer. They had the same conversation down to the point where the traveler asked about the people who live in Texas.

The local farmer asked of this man, "What kind of people live in Missouri?" The traveler replied, "The finest people in the world." The local farmer said, "You'll find that kind of people living in Texas."

Even the Bible says, "Before trying to cast the mote out of thy brother's eye, remove the beam from your own eye."

The problems of supervision require much introspection and analysis. Industrial relations are intangibles in the mind and emotions. They are reflections of the most subtle type and often are difficult to find.

The supervisor is the great stone face of correct conduct and noble qualities toward which those who look receive inspiration for action, or he is the angular face of disruptive characteristics which produce grievances and unrest.

Do not forget that power is not enough for the voice of a hog caller. It must have appeal that will stir the hogs to action. If this is true for hogs, how much more important it must be for those who direct people.

The power of personality is the power that moves the world. Those people have the power of inspiration and motivation. Every man in executive work must carefully examine his personal characteristics.

THIS IS the fifth in a new series in "Cotton" by Mr. McLaurine. The first appeared in the November issue, the second in the December issue, the third in the January issue, and the fourth in the February issue. Previously, we had presented 12 articles by him directed mainly to plant executives and supervision, as to various phases of public and industrial relations.

The present series is intended to provide, for the operating executive, information which it is hoped will be useful for transmitting to the employees of the plant.

Reprints of previous articles in either series are available . . .

Have You Kept the Faith?

THE AVERAGE mill worker takes it for granted that you as his supervisor have made his job as safe as possible. He assumes that because he came to work this morning with two strong hands fully equipped with five fingers each, two sturdy feet, and two clear eyes, he will return to his family tonight just as well equipped—and he has every right in this faith. Working in this unconscious belief, he puts his hand in the bobbin stripper without stopping to think of the possible consequences to his strong hands; he walks around the beam storage in the slasher room without worrying whether or not the end beam will roll off the rack and crush his foot; he sharpens his tools on the emery wheel without worrying about the only two eyes he will ever have.

Now, have you as supervisor kept the faith with these men?

Are your bobbin strippers equipped with interlocks which make it impossible to suffer injury from the machine? Are your empty beam storage racks provided with some sort of home-made stop to prevent the end beam from dropping five feet or more to the aisle floor? Have you provided an adequate number of goggles for grinding, well maintained as to cleanliness and fit, plus the all-important constantly enforced rule to wear goggles when grinding?

If your answer is, "Yes", you have kept the faith, and your employees can devote more of their time to actual operations and less to the conscious dodging of hazards.

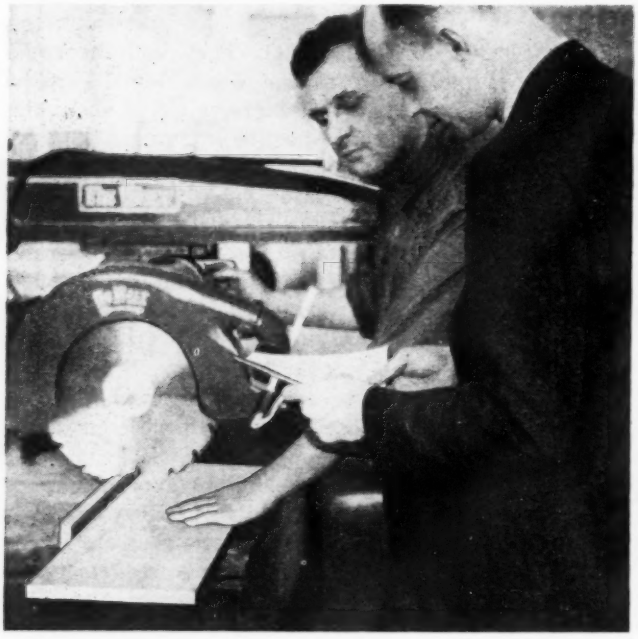
The mill that fails to keep this faith is easy to spot. Belts, pulleys and gears are exposed in every department. Goggles are conspicuous by their absence. Floors are dirty from tobacco juice, leaking drip pans, over-running humidifiers, and the mixture of lint with all these. The stair treads are excessively hollowed out from thousands upon thousands of footsteps, and there is a lack of handrails and proper illumination in the stair towers. The elevator hoistway gates are nailed or propped open, and the car safeties have become useless through neglect. These are the obvious indications of a broken faith. There are many other indications which exist and can be found but do not appear on the surface.

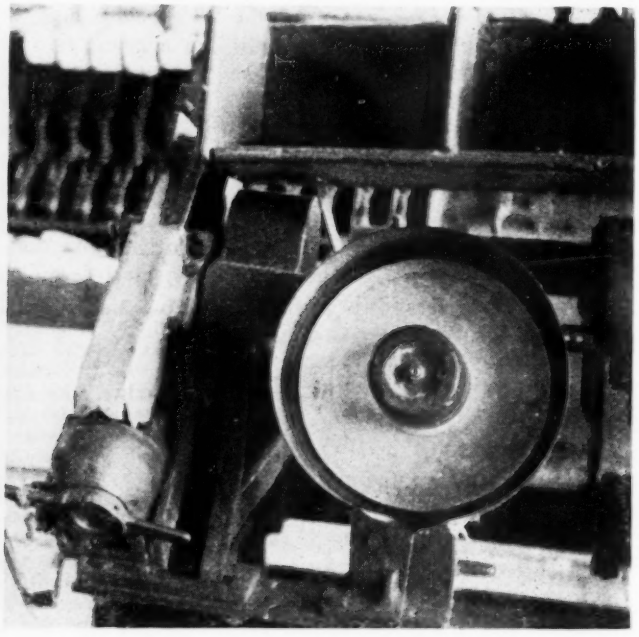
On the other hand, the mill that has kept the faith is just as easy to spot. The floors are dry and spotless, and are either well waxed and swept or scrubbed to an attractive whiteness. Belts and gears can be heard but not seen. Several pairs of clean well kept goggles hang at every emery wheel, and at eye level is posted in large letters the rule relative to wearing goggles while grinding. Stairways are as safe as they can be made, and the elevator hoistway protection is foolproof. It naturally follows, then that the employees in this mill take a sincere personal pride in their own appearance, in the appearance of their own department, and in the quality of their work, regardless of the nature of their particular job. Furthermore, they still possess every finger, every toe, and the two eyes they had when they first found a place on the payroll of this mill.

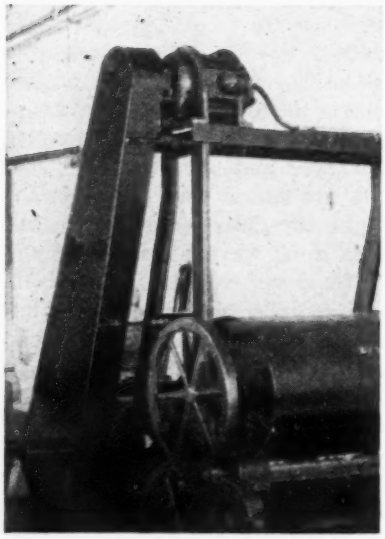
In which mill can you be found.

In which mill would you LIKE to be found?

Have you kept the faith?





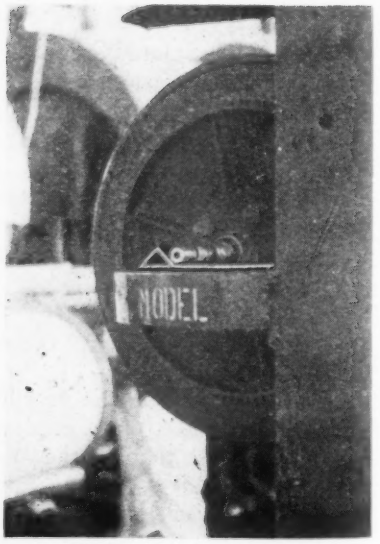


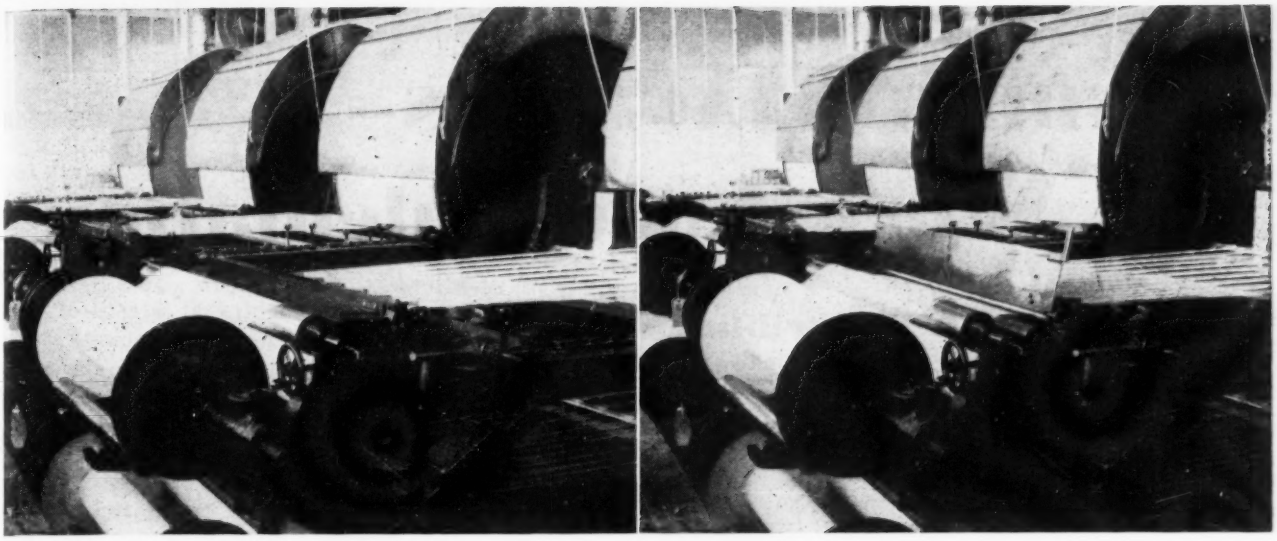
Upper left: An accident frequently occurs whose fundamental cause is created by personnel rather than by mechanical equipment even though the latter may be the actual instrument of injury. This picture shows a carpenter engaged in a very dangerous operation, being interrupted by another employee and having his attention distracted from his hazardous job.

Upper right: The guard on this tailing machine, designed by a spinning room overseer, speeds up production because the operator can concentrate on his job. He can feed the machine with complete faith in his security because the hazardous parts have been covered.

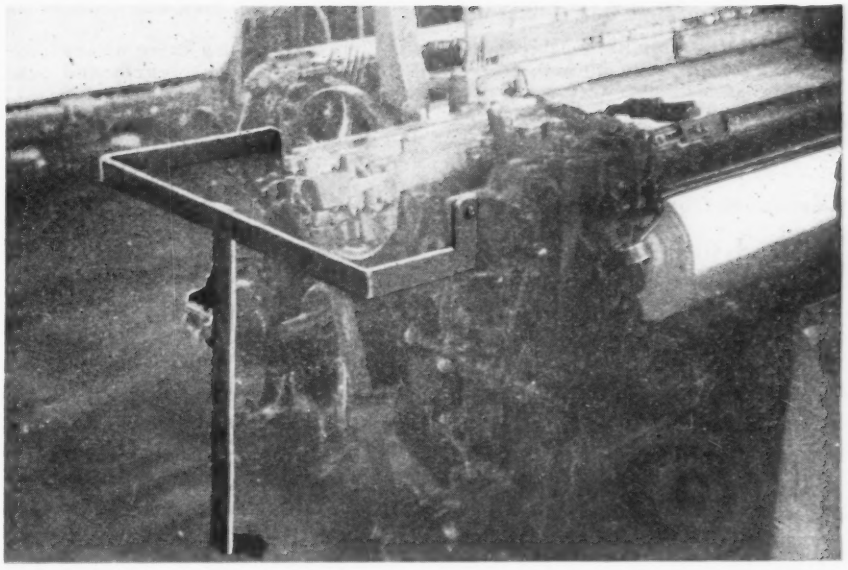
Left: The management of the mill where this picture was taken does not consider a machine properly installed until all the hazardous parts have been effectively guarded. The machine manufacturers supplied the gear guard for this finisher picker and the master mechanic covered the belt drive and the protruding shaft.

Right: Just a few cents worth of material, but worth thousands of dollars in protected toes. This bit of channel iron, almost too small to be noticed, was welded at the aisle end of the empty beam rack to prevent the end beam from rolling off accidentally. Another piece is welded to the other side.



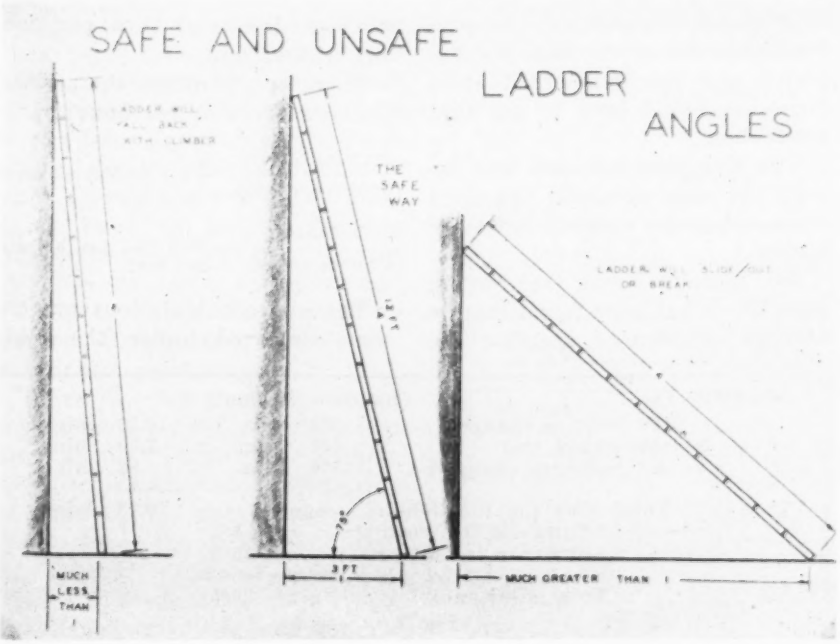


Above: A guard of this type on the slasher, while easily raised, succeeds in discouraging the unwary employee from reaching in the calender rolls and losing a few or all of his fingers. When the slasher is running, the guard is fastened down by efficient supervision. Photos show guard in raised and lowered position.

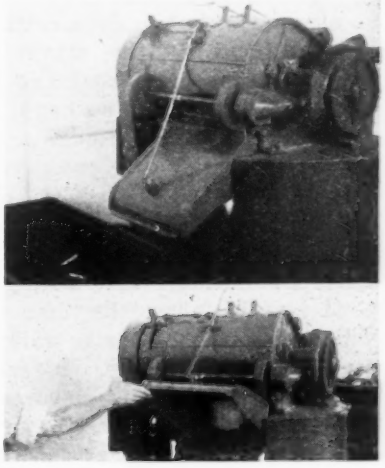


Right: Simple but effective, this rail guard keeps trucks from damaging the loom, and prevents the loom from damaging the employee. This was a satisfactory solution to a weave room traffic problem caused by the common practice of cutting corners. The lay on a loom can cause serious injury to those that are careless enough to come in contact with it. It is especially important that looms on a busy alley, near the cloth table or where the dope wagon stops be adequately protected.

Below: The National Safety Council reported that in 1940, "falls of persons" was the most expensive type of injury, and the second highest in frequency. A large part of them involved ladders—defective ladders, ladders inadequate for the job, and ladders unwisely used. Teach your men safe methods of handling ladders. Ladder at left will fall backward with climber; ladder at right will slide out or break. Ladder in center is in correct position.



Below: Another essential guard made by the master mechanic. The cylinder cover is interlocked with the pulley on the side so that the cover cannot be raised until the cylinder has been mechanically locked in stopped position. One rod extends horizontally and another vertically from the latch to the hood over the delivery end so that the hood cannot be raised to clear the choke until the cylinder is locked stationary.



Winding Machines—Work Load Calculations

By J. W. Stribling
Field Engineer, Universal Winding Company

IN THE first installment of this series, page 59, January issue, Mr. Stribling covered the two principal types of hand-operated winding machines: drum winders and precision winders; he also discussed the operations involved in the winder operator's job, and how to calculate the time element on these operations. He also described the two methods of operation: having the packages fill up together, the "cycle method", and letting them fill up at random, the "random method".

In the second section, page 85, February issue, he analyzed these two methods further, and gave details for figuring the work load calculations on the cycle method.

In the accompanying third installment, he covers the calculations covered in the random method, as well as doffing in sets. The fourth and concluding installment will cover precision winders . . . . . .

Article 3

(Continued from the February issue)

AS HAS BEEN stated, the random method of operating spindles is the one used where the end breakage is very high and the operator does not work in cycles but services each spindle as it becomes inoperative. Although the labor cost of winding is higher under this method, some mills prefer to use it in order to increase the machine efficiency of the winding machines. It can be shown that even including, along with the labor cost, the fixed charges on the number of spindles involved, the total cost will be lower using the cycle method, even on very high end breakages. However, in cases of limited floor space available, there is no alternative but to get a certain efficiency out of the maximum number of machines that can be installed in the space on hand.

It is much more difficult to estimate accurately the production which should be turned off per operator on the random method, because the times used for the different elements (see box) depend largely upon the distance which the operator has to walk in servicing each spindle. In some cases she will have to move only the distance of one or two spindles, whereas sometimes she may have to walk half the length of the machine to get to an inoperative spindle. However, if enough time studies are made under enough different conditions, figures can be obtained which will be fairly accurate. By checking the figures obtained against actual production records in a number of instances, the accuracy can be verified.

In the example to be given (Fig. 3), the figures have been checked numbers of times, and while there may be instances where they may not be sufficiently accurate, it is thought that they can be safely used in the average mill to predetermine the production per operator and the number of spindles she should tend to get that production.

The elements involved are exactly the same as under the cycle method, but the element times are higher.

For Element No. 1 (see box on page 70) it has been found that an *average experienced* operator can change bobbins at a rate of .122 min. per bobbin on counts from about 10s to 30s, where she services the spindles at random.

For Element No. 2, the same operator can tie breaks in .120 min. per break.

For Element No. 3, the time to change a package is .222 min., but of this time, .122 min. is included in the bobbin-changing element, since the package is generally changed at the emptying of a bobbin. This leaves .10 min. to add in for changing the package, the same as was used under the cycle method. This is assuming, of course, that the packages are doffed and the spindles re-started immediately, without waiting for all the spindles to fill up. Where the packages are doffed in sets the element time for doffing is figured differently, as will be illustrated in an example under that method.

Again basing the calculations on a unit of 100 bobbins, a summary of the elements involved, assuming 60 per cent end breakage and 12 bobbins per package is given in Fig. 3 (see below).

Since the total time for winding 100 bobbins of yarn is 20.23 minutes, the total time per bobbin is .2023 min.

Therefore, to obtain the production per operator per hour:

$$\frac{60 \text{ mins.} \times 80\%}{.2023 \text{ min. per bbn.}} = 237 \text{ bobbins per hour.}$$

$$\frac{237 \text{ bbns.}}{4.0 \text{ Bbns. per Lb.}} = 59.3 \text{ Lbs. per operator per hour.}$$

The above calculations are the same as used under the cycle

ELEMENTS (Random Method)					
1. 100 bobbins changed	×	.122	min. =	12.20	mins.
2. 60 breaks tied	×	.120	min. =	7.20	mins.
3. 8.3 packages changed	×	.100	min. =	.83	mins.
Total time for 100 bobbins wound			=	20.23	mins.
Allowance for cleaning	=	5%			
Allowance for fatigue	=	15%			
Total allowance	=	20%			

Fig. 3.

method (February issue), except for the differences in the element times. However, in coming to the calculation of the number of spindles the operator should tend to get the production estimated, we depart entirely from the cycle method.

The method to be given was arrived at partly from theory and partly by trial and error. Such a procedure may be open to criticism, but the method does have the virtue of having been proven accurate in actual mill practice.

For the illustration, we shall use the same yarn data as was used under the cycle method; namely, 16s/1 yarn. 4.0 bobbins per pound (3,360 yards per bobbin), 3 lbs. per package, 500 y.p.m. winding speed, *but with end breakage of 60 per cent.* The illustration is given in Fig. 4.

Now, to obtain the number of spindles that an operator should tend, we divide the total time per bobbin (7.722 min.) by the average service time *per bobbin*, which, under the "random" method of servicing the spindles, is considered the average service time *per spindle:*

$$\frac{\text{Total Time per Bbn. } 7.722 \text{ Mins.}}{\text{Ave. Service Time per Bbn, } .2023 \text{ Min.}} = 38 \text{ Spdls. per Operator.}$$

The form shown as Form 2 is offered as a condensation of the calculations given.

Doffing Packages in Sets

Under the method of doffing packages in sets, the winder tender attempts to keep the broken ends tied up so that the bobbins will run out in sets. No attempt to work in cycles is made. The operator pays particular attention to broken ends, tying them up before changing empty bobbins, so that all the spindles on her assignment will fill up as nearly as possible together. The reason for this was mentioned previously.

Since the full packages are to be doffed in sets, it is obvious that the element time for doffing should not be included in figuring the number of spindles per operator, since the doffing is almost an entirely different operation. The operator pays no attention to the diameters of the packages un-

Running time per bobbin, $\frac{3360 \text{ Yds.}}{500 \text{ YPM.}}$ = 6.72 Min. per bobbin.

Idle time per bobbin:

(*) Changing bobbin, .5 min + .122 min. = .622 Min. per bobbin.

(**) Retie breaks, (.5 min. + .120 min.) × 60% = .372 Min. per bobbin.

(***) Change packages (.10 min.) / (12 bbns. per pkge) = .008 Min. per bobbin.

TOTAL TIME PER BOBBIN = 7.722 Mins. (Except cleaning & fatigue)

Fig. 4.

(*) .5 min. is the "dying" time, or momentum time, of the spindle after the bobbin runs out. By adding to that time the .122 min. for changing the bobbin and starting up the spindle, we get .622 min. as the time *per bobbin* the spindle is inoperative for each bobbin change.

(**) In this instance we have .5 min. as the "dying" time plus .120 min. for tying up the broken end giving 620 min. *per break.* To convert this time to a *per bobbin* basis, we have to multiply by the percentage of end breakage (60%), which gives .372 min. as the time the spindle is inoperative *per bobbin of yarn.*

(***) Obviously, this is the conversion of the package changing time to a *per bobbin* basis, remembering that a full bobbin is changed as part of the operation, with that time included under "Changing bobbin".

DRUM WINDING ANALYSIS
(Working at Random)

Yarn Number	16/1	Yarn Speed, YPM.	500
Bobbins per Pound	4.00	Bobbin Runs, Mins	6.72 (A)
Yards per Bobbin	3360	Bobbins per Cone	12
Est. End Breakage	60%	Pounds per "	3

(1) 100 Bobbins changed x .122 Min. = 12.20 Mins.
60 Breaks tied x .120 " = 7.20 "
8.3 Cones changed x .100 " = .83 "
Total for 100 bobbins = 20.23 Mins.(B)

AVERAGE SERVICE TIME PER BOBBIN = $\frac{20.23 \text{ Mins.(B)}}{100 \text{ Bbns.}}$ = .2023 Min.(C)

(2) SPINDLES PER OPERATOR:

Running time per bobbin (A) = 6.72 Mins. per Bbn.
Idle time per bobbin:
Changing bobbin (.5 Min. + .122 Min.) = .622 " " "
Tie breaks (.5 " + .120 ") x 60 % = .372 " " "
Change package (.10 Min. / 12 Bbns. per package) = .008 " " "
Total Time per Bobbin = 7.722 " " "

$\frac{\text{Total Time } 7.722 \text{ Mins.}}{\text{Service Time } .2023 \text{ Min.(C)}}$ = 38 Spindles per Operator

(3) BOBBINS PER OPERATOR PER HOUR:

Allowance for cleaning 5 %
Fatigue 15 %
Total Allowance 20 %

$\frac{60 \text{ Mins. x } 80 \%}{.2023 \text{ Min.(C)}}$ = 237 Bobbins.

(4) POUNDS PER OPERATOR PER HOUR:

$\frac{237 \text{ Bbns. per Operator per Hour}}{4.0 \text{ Bbns. per Pound}}$ = 59.3 Pounds.

(5) PIECE RATE PER Box :

$\frac{40 \text{ ¢ per Hr. x } 1.15 \text{ x } 126 \text{ Bbns. per Box}}{237 \text{ Bbns. per Operator per Hour}}$ = 24.5 ¢ per Box

(6) MACHINE EFFICIENCY:

$\frac{237 \text{ Bbns. per Op. per Hr. x } 6.72 \text{ Mins.(A)}}{38 \text{ Spindles x } 60 \text{ Mins. per Hour}}$ = 70 %

Date _____ By JMS

Form 2

DRUM WINDING ANALYSIS
(Working at Random)
(Doffing in Sets of Packages)

Yarn Number	16/1	Yarn Speed, YPM	500
Bobbins per Pound	4.0	Bobbin Runs, Mins.	6.72 (A)
Yards per Bobbin	3360	Bobbins per Cone	12
Est. End Breakage	60%	Pounds per "	3

(1) 100 Bobbins changed x .122 Min. = 12.20 Mins.
60 Breaks tied x .120 " = 7.20 "
Total for 100 Bobbins = 19.40 Mins.(B)

AVERAGE SERVICE TIME PER BOBBIN = $\frac{19.40 \text{ Mins.(B)}}{100}$ = .194 Min.(C)

(2) SPINDLES PER OPERATOR:

$\frac{6.72 \text{ Mins.(A)}}{80\%}$ = 8.4 Mins.(E), Average time to wind one set of bobbins. No allowance for cleaning, gauging, or fatigue.

$\frac{8.4 \text{ Mins.(E)}}{.194 \text{ Min. (C)}}$ = 43 SPINDLES PER OPERATOR.

(3) BOBBINS PER OPERATOR PER HOUR:

8.4 Mins.(E) x 12 Bbns. per Cone = 101 Mins.
Allowance for gauging & doffing = 13 "
Allowance for cleaning = 5 "
85% of Total Time = 119 Mins.
(Allow 15% of Total Time for Fatigue)
Total Time per Set of Cones = $\frac{119 \text{ Mins.}}{.85}$ = 140 Mins. (F)

$\frac{43 \text{ Spdls. x } 12 \text{ Bbns. per Cone x } 60 \text{ Mins.}}{140 \text{ Mins.(F) per Set of Cones}}$ = 221 Bobbins per Operator per Hour.

(4) POUNDS PER OPERATOR PER HOUR:

$\frac{221 \text{ Bbns. per Operator per Hour}}{4.0 \text{ Bbns. per Pound}}$ = 55.3 Pounds.

(5) PIECE RATE PER Box :

$\frac{40 \text{ ¢ per Hr. x } 1.15 \text{ x } 126 \text{ Bbns. per Box}}{221 \text{ Bbns. per Operator per Hour}}$ = 26.2 per Box

(6) MACHINE EFFICIENCY:

$\frac{221 \text{ Bbns. per Op. per Hr. x } 6.72 \text{ Mins.(A)}}{43 \text{ Spindles x } 60 \text{ Mins. per Hour}}$ = 57.6 %

Date _____ By JMS

Form 3

til they are approaching full size. When the first package reaches the desired diameter, she doffs that spindle and lets it remain idle until all other spindles are doffed. This is done for each succeeding spindle, so that there will be a period of several minutes when she will be actually tending only a very few spindles, the balance being idle until the last spindle is doffed. This means a loss in efficiency, but that is the penalty which is inherent with this method of operation.

In view of the detailed explanations which preceded the previous examples, it is felt that Form 3 covering the method of tending the spindles at random and doffing in sets will need little clarification. However, there are two points which may need explaining, and this is done below:

In explanation of the use of the figure 80 per cent in Section 2 in Form 3, experience has shown that where the operator is working continuously at changing bobbins and tying breaks she can keep all her spindles operating 80 per cent of the time. Therefore, by dividing the running time of the bobbin (6.72 mins.) by .80, we get the total spindle time per bobbin (8.4 mins.) while she is working, and this will also be the total time per set of bobbins, since she keeps the breaks tied up so as to have the bobbins run out in sets. The calculation to determine the number of spindles per operator is self-explanatory.

In figuring the number of bobbins per operator per hour, Section 3 in Form 3, we use an entirely different method from any previously given. The elements given here could be figured down to a bobbin basis, which would permit using the form illustrated for tending the spindles at random and doffing the individual full packages as they reach full size. However, it seems simpler to make the allowances for gauging and doffing the packages as a separate item, since this element is almost a separate and distinct operation. The same will hold true for cleaning, since the spindles are always cleaned between doffs.

As for the time used in example for gauging and doffing (13 mins.), here again we must fall back on experience, which has shown that this time will be about twice the running time of the bobbin. Actually the total elapsed time between the doffing of the first and last spindle on an operator's job will be about three times the running time of the bobbin, but during that time she will have tied in one set of bobbins, and this set is included in the total number of bobbins per set of packages. Therefore, for the *extra* time required for the filling up of the packages, we use twice the bobbin running time.

This outline of the elements involved in the job of a winder operator is reproduced here from page 61 of the January issue, first installment, as a matter of reference convenience in the present installment:

ELEMENTS

1. Changing full bobbin:
   a. Remove and dispose of empty bobbin.
   b. Pick up full bobbin, find end, remove surplus yarn from base of bobbin, and place on supply spindles.
   c. Find end on package, tie knot and start spindle.
2. Retie breaks. (Practically same as "c" above, because the broken end is usually found in the tension brackets.)
3. Gauge and doff full package.
4. Cleaning.
5. Fatigue allowance.

(The fourth and final installment in this series by Mr. Stribling, covering workload calculations on precision type winders, will appear next month. Readers desiring to secure reprints of the entire series are invited to so advise the Editor.)

Flameproofing Treatments for Textile Fabrics

By Eric Croen

THIS DISCUSSION of treating textile fabrics to make them flameproof concludes a series by Mr. Croen. The first two articles, in the December and January issues, dealt with waterproofing and water-repellent finishes; the third, in the February issue, covered mildewproofing of fabrics.

In the present discussion, Mr. Croen covers the materials used in making flameproofing treatments, the methods of application, and the procedure for testing, with particular reference, as in the other articles, to fabrics now going into army and navy use.

He has thus covered the major phases in the field of protective finishes for textiles in a series that has added much to literature on this important subject . . . . . .

FLAMEPROOFING of textiles is not a new art, for there are records of methods used two to three centuries ago. A noted chemist compiled a list of suitable salts a hundred years ago, some of which are to be found in present-day mixtures.

Perhaps this knowledge is not being adequately applied, for every year there are many fatalities from burns, 8,700 in one year (1940), of which 1,670 were children, these often resulting from clothing which caught fire.

There is a great market for fireproof cloth which is largely undeveloped; only a few of the uses can be mentioned here. The dangerous habit of smoking in bed suggests treatments for bed sheets, blankets, and also lounging robes and jackets. Then there is the field of work-clothes for workers in steel mills, shipyards, ordnance plants, etc., where there are likely to be sparks; and coverings for the heads of women welders. In England, where open fireplaces are more common, napped materials like flannelettes are required to be flameproofed. Most large cities have regulations that require draperies and decorations in public places such as hotels, theaters and night clubs to be made fire-resistant, with periodic inspections.

Needs for Flameproofed Fabrics

The present war has greatly increased the importance of finding means of combatting the terror of fire, which is now so much an instrument of destruction. Incendiary bombs, flame throwers, burning cities are constantly in the headlines. Tankers sinking in oceans of fire, and airplanes shot down in a burst of flame, are terribly dramatic illustrations. During the last war, research was largely confined to getting flameproof "dopes" for airplane wings (*Jour. Ind. Eng. Chem.*, page 556, 1935). Now we are expanding our efforts to protect both our men and equipment from fire dangers. But the problem is far from being satisfactorily solved, as we can surmise from statements issued by various government agencies and the Textile Research Council.

Modern demands call for a treatment of textiles that resists rain and sunlight, fire and water and all the other deteriorating influences of severe weather exposures. Since older methods are rather inadequate, we will review them only briefly, pointing out their shortcomings and leaving more room for modern practice, which has advanced greatly in the very recent past.

Our discussion is largely confined to cotton fabrics which are almost impossible to render *fireproof*, as cellulose will char and decompose when the temperature gets high enough. The most we can expect is a *flame*proof fabric which resists ignition by a match or small flame or which, if so ignited, will not continue burning after the flame is removed; for even well-treated materials will add fuel to any fire after it is well started. Flameproofing is a term indicating a degree of resistance comparable with water repellents in their resistance to water.

Many compounds and methods have been suggested and tried. The literature on the subject is voluminous. For such, the reader is advised to look up a bibliography on flameproofing of textiles (*American Dyestuff Reporter*, pages 418 and 445, 1940) or a good summary of older methods in the Bureau of Standards Circular Letter LC467.

The Use of Soluble Salts

The use of soluble salts whose water solutions are merely dried into the fabrics is well known. The list of such inorganic salts is long, and they are very effective when the amount left in the goods is between 10 and 20 per cent by weight. Several ammonium salts, including the sulfamate (*American Dyestuff Reporter*, page 305, 1941), borax with boric acid, borophosphates, and sodium tungstate are a few outstanding examples. The method of their application has been well worked out and need not be repeated here. Such matters as tendering, toxicity, cost, and stiffening have been studied. The formation of large crystals that are removed mechanically is to be avoided. However, the greatest fault is that such soluble salts do not resist laundering, and so, when used on clothes, the fire-resistance must be renewed each time by reimmersion in a solution before drying, somewhat in the manner described in a previous article as to the renewal of the emulsion form of water-repellents. Where the disadvantage of possible shrinkage in water solutions is not objectionable, progressive laundries and drycleaners are already offering customers fire-retardant treatments for clothes, curtains, linens, etc. Textile mills will be called upon to produce the finish initially.

Combined with Water-Repellency

To prevent this easy leaching away of fire-resistant qualities, combinations of this effect with a water-repellent finish have been tried. Simultaneous application is not very practical, as the high concentration of salts is not compatible with even the best water-repellent emulsion. When applied separately, no matter which is applied first, the results are not very good as the water-repellency is rendered much less effective and so does not prevent the fire-resisting salts from leaching away. Even the use of Zelan with ammonium sulfamate is not satisfactory (*American Dyestuff Reporter*, page 308, 1941). However, at least one military fabric, a gabardine with wool warp and cotton filling for Army Specification 6-234, is said to be protected by application of ammonium sulfamate and a water-repellent. This may only be a stop-gap until a better method is developed.

The next logical step is to render such salts insoluble or precipitate others within the fabric—the interaction of calcium chloride with sodium phosphate or sodium tungstate with tin crystals are examples. The outstanding process is the famous Perkin Non-Flam (J. A. Clark, "Finishing Materials", page 114). This two-bath method consists of an immersion on sodium stannate solution and drying; then the precipitation of the tin salts in a second solution of ammonium sulphate. Modifications have been investigated but none is very durable from our viewpoint, as a few launderings will remove all the flameproofing effect.

Other insoluble inorganic substances that resist high temperatures, such as magnesium carbonate, the borates of zinc and manganese, and certain antimony compounds, will render a fabric effectively flame-resistant when used to the extent of 20 per cent on the weight of the goods. These have to be fixed by the use of non-inflammable binders, and find an important place in the mixtures described below.

Organic and Inorganic Compounds

There are many more *organic* compounds which do not support combustion, such as cellulose acetate, vinyl chloride and its copolymers, the aryl phosphates; and highly chlorinated derivatives of rubber, of hydrocarbons and naphthalenes, and the diphenyls. They have found wide use in fireproof lacquers and paints, where they are very effective. However, when applied to textiles, none is powerful enough *alone* to render fabrics inflammable.

Methods that make use of *both* the inorganic and the organic materials have received considerable attention. For example, an elaborate process devised by Martin Leatherman (U. S. Department of Agriculture Circular No. 466) starts with a modified Perkin stannate two-bath application, followed by coating with a chlorinated hydrocarbon wax which adds to the fire-resistance and supplies the waterproofing. Exposure to weather revealed that there was a great loss in strength caused by the action of sunlight. This was corrected by incorporating both iron and chrome oxides. Plant size trials gave good results, but the number of operations proved that the method was entirely too cumbersome for general use.

Some Available Materials

Numerous patents of intricate mixtures have been granted in the past few years which have resulted in a great deal of good work. The war has accelerated their use and improvement. It is our purpose to examine some of them in more detail. To do this, it will be convenient to separate the mixtures into four general headings:

First, an organic group of compounds which act chiefly as a binder for the inorganic materials. Flexibility and water-resistance are the two other properties this film-forming part contributes. The fire-resistant part rests chiefly with the insoluble inorganic materials already mentioned. A third group includes the stabilizers which diminish the action of light which causes decomposition and tendering unless shielded by opaque pigments or substances which neutralize small amounts of acid first formed. And last, the liquid medium which holds these substances in solution or suspension during application, as all the properties are applied together during one run.

Many changes have been made in the various ingredients, and such changes, sometimes by necessity, sometimes as an improvement, are still going on. Therefore, only a general idea of the constituents of each group can be given. The organic part may be broadly called a resin binder. For this purpose, chlorinated rubber was an outstanding success, but lack of supplies even for the most urgent government work take it out of the picture. In its place have stepped others: resins, the alkyd type, the vinyl type, the coumarone type, and also ethyl cellulose. These last two are not especially fire-resistant, but form tough, flexible films.

Chlorinated Hydrocarbons

Chlorinated hydrocarbons are incorporated, in order to supply most of the waterproofing effect, and if such paraffins and naphthalenes are chlorinated to the extent of 50-60 per cent, they aid in the fire-resistance. Such films have to be plasticized, and for this purpose chlorinated diphenyls, tricresyl phosphate and triphenyl phosphates are excellent as they are also fire-retardants and non-volatile. Recently, plastics compounded of esterified rosin combined with phenol-formaldehyde resins have been tried with success and at lowered cost. Various drying oils have also been tried. Such ingredients have to be compatible, not only with themselves, but with the pigments later added. The resin binder mixture has to be carefully compounded for other reasons: it must leave no offensive odor, must not remain tacky four hours after drying, should hold the pigments so well that there is relatively little crocking; and of course, should not detract from the flameproofing desired while upholding most of the water-resistance needed.

Magnesium carbonate, zinc borate, manganese borate, and antimony oxide are the chief fire-resistant salts used. Formulas given later will indicate the amounts necessary. Magnesium carbonate is also a typical stabilizer, as it absorbs or buffers the acids which may form when sunlight decomposes the chlorinated bodies. The pigments not only add color to the mixture, but by their opaqueness

shield the film from the action of the light. Without such stabilizers a fabric might be seriously tendered on exposure, while with them the loss in strength is reduced to a mere 10 per cent or less during a month.

Iron and chrome oxides along with other earth colors are commonly employed and lampblack can be added to get the desired olive drab shades which the Army requires. The Navy and Maritime Commission use a slate shade which is much lighter but which has to be fast to light. For this reason Monastral Blue with lampblack and earth colors are used. Such pigments must be finely ground so they do not get lumpy during storage. Coarse particles can cause untold trouble during spraying, brushing, or other methods of applying the liquid mixture to cloth.

The liquid medium has generally been an organic solvent which is chosen for low cost, for its solvent action of the organic parts, and consideration for local drying conditions. Benzol has too low a flash point and is prohibited by law in many states. Toluene is an excellent solvent which has many more urgent war jobs, but recently it has been made from petroleum sources and is now more available. Other solvents from petroleum bases are the various grades of high flash-point naphthas. Generally, the distillation runs between 150 to 400 degrees F.; if higher, the goods are difficult to dry and may remain tacky. Such solvents usually give excellent penetration, quickly and without much squeeze.

Representative Formulas

No specific formulas will be quoted, but a general idea can be given by showing the degree of variation of the different ingredients that can be used. A solvent type of mixture may contain:

15-30 per cent chlorinated organic body, such as a chlorinated paraffin; 1-5 per cent plasticizer such as an aryl phosphate; 10-15 per cent zinc or manganese borate; 5-25 per cent pigments and fillers; 25-50 per cent solvents—totalling to about 10 pounds per gallon, of which 4 to 5 pounds are solids.

Various attempts have been made to use water emulsions to replace at least part of the solvents, both for greater cheapness and lessening the hazard which some finishers think make them unfavorable for more general use.

A water emulsion type of mixture can be devised from this starting point:

10-15 per cent organic binder, an alkyd resin; 2-5 per cent ethyl cellulose for film forming; 2-5 per cent antimony oxide for flameproofing; 10-15 per cent chlorinated hydrocarbon; 0-2 per cent zinc oxide and 5-10 per cent magnesium carbonate, as stabilizers; 10-15 per cent pigments, such as olive drab earth colors; 25-50 per cent solvent of naphtha nature; 5-10 per cent emulsifier, such as aluminum stearate; and 10-15 per cent water.

These formulas contain the necessary substances, then, to give a water- and weatherproof effect that will be fire-resistant. But outdoor use presupposes protection against mildew also. As stated in the previous article in the February issue, pigments alone offer some protection. The use of zinc or manganese borate for this purpose has been patented and illustrated in the first formula just given. Other formulas can include the chlorinated phenols, especially the pentachlor phenol, so that about 1 per cent is deposited on the goods finally; i.e., 2-3 per cent in the mixture. But the coating may be so thorough on the goods that there is not much food for mildew. The waterproofing compounds in this case are also slightly toxic.

Applying the Treatment

Such mixtures when properly compounded are rather easy and efficient to apply. A single passage of the grey goods, such as duck or webbing, through it gives the desired results—color and protection—if the pickup is sufficient to give enough deposit of solids when dried. A padder can be used and the squeeze must be heavy enough to press the materials into the goods without leaving the surface too bare of color and chemicals. Knifing the mixture on in the manner of pyroxylin coating is also used. The blades are set at 1/16-1/4-inch. Both sides are treated during one passage by proper reversing. A compromise between these two methods makes use of 2-4 round or angular bars of glass or metal which are set at a vertical angle through which the cloth after leaving the dip, is threaded. In all of these methods, the relationship of penetration to surface deposit and the pickup has to be studied, as the effect varies with the condition and construction of the fabrics.

The drying can be done on the usual dry cans, though a short passage hot air box first helps remove the surface wetness. Festooning over slowly traveling rolls through a long hot chamber, or lying on driven wooden rollers (which are sometimes covered with card clothing to give added traction) in a tenter frame housing, are other methods used. The speed of drying depends on the temperature of the cans or the hot air in the chambers. This may vary from a speed of three yards per minute at 160 degrees F. to 25 yards a minute to 300 degrees F., and is also dependent on the length of exposure.

Very large quantities of duck and some webbing for binding have been and are being run to meet O.Q.M.G. No. 3 Type II specification, for paulins and covers under Federal Specification K-P-146, for Army Air paulins in Spec. No. 26755, all of which can be referred back to Fed. Spec. CCC-D-746 (now amended) which outlines the properties required and the methods of testing. It calls for cotton ducks which are fire-, water-, and weather-resistant because of the uniform coating of a suitable mixture that penetrates well, is not hygroscopic or toxic, of the proper (O.D.) color, flexible at low and high temperatures and free from tackiness.

The increase in weight over the gray goods runs from 50 to 70 per cent depending on the quality of the goods; note how great this is compared with the other protective finishes so far mentioned in this series. The odor is noted by placing a piece 11 inches square in a box 12x12x6 inches for a day—it must not be objectionable. The water resistance is tested by the hydrostatic pressure method. The weather-resistance is judged after exposure in a machine similar to the Weatherometer where strong light and occasional showers are continued for 360 hours. The water alone is almost equal to a day's soaking. After this ageing, the tensile strength must not be more than 10

per cent below that of the *untreated* duck, the water permeability is rechecked and also the fire-resistance.

Methods of Testing

Testing the fire-resistance is performed by hanging vertically samples cut 2x12½ inches both from the warp and filling in a closed closet free from drafts. A Bunsen burner flame, without an air supply so that it is yellow, is regulated to a length of 1½ inches, and this applied to the middle part of the lower end for 12 seconds when it is removed. The duration of the flame is noted; it should go out in one or two seconds in a good specimen, and the length of the char is also measured after gently pulling the cloth so as to rip all the weakened portions. It should not be more than 4½ inches long at the most, and 3½ inches for the average of ten. The accelerated weather test must not cause deterioration of the fire-resistance. The A.S.T.M. method D 626—41T is similar to this, but the method devised by the American Association of Textile Chemists and Colorists (see *American Dyestuff Reporter*, page 91, 1941, or current AATCC yearbook) differs from this and may be more suitable for certain fabrics. The Bureau of Standards Circular LC467, already mentioned, reviews several methods.

Other government fabrics using such mixtures may be mentioned. Navy Specifications 27D1b and 27D1 (INT) call for a slate-colored cotton drill that is fire- and weather-resistant. It is used for life preservers and vests. The tests are similar to those outlined above. The Maritime Commission also requires this shade and fabric.

Army Air Corps Spec. No. 16092-B calls for a duck which is fire-, water-, gasoline- and oil-resistant, as does Navy 24D-4B. The fire test is like that which has been described; the water soaking for three days is more severe than in the others mentioned, this eliminating all materials which are soluble in water. The permeability to gasoline for one minute and to oil of an SAE viscosity of 50 for one hour tests the excellence of the coating and the solubility of any of its constituents—it has nothing to do with the flame tests. Of course the coating mixtures used are in line with the materials and methods already detailed. Such mixtures are also being applied to paper for camouflage work under Engineers Spec. EBP TS147.

At present, this colored coating method gives the very best of fire-resistance, but it is constantly being improved upon or being changed as new materials are being discovered or older ones become scarce. The problem of getting adequate protection for clothing has not yet been satisfactorily solved, as these coating methods leave much to be desired in flexibility, in odor, in excessive weight increase, and in pleasant "finish" in the ordinary textile sense. Such a protective finish should take into consideration the matter of launderability. We now have to resort to soluble salts which must be renewed after each washing if the fire protection is retained. Some research is being carried out with chlorinated hydrocarbons — their odor, possible toxicity and other disadvantages leave much to be done before clothing, sheets, and other textile uses will find them acceptable. The many kinds of resins may finally produce a solution—war stimulates our research and some such answer may come out of it.

Another approach to this problem of fire-resistance may be through new textile fibers such as Speakman's alginate rayons or the incorporation of materials and pigments in the spinning baths to build in the flame-resistance into the fiber itself, such as Roche mentions (*American Dyestuff Reporter*, page 929, 1937). Of course, the perfect solution is already known, but its properties as a textile fiber need much more development and the cost must be lowered before widespread use can be realized. We refer to glass, which already has a firm place in certain parts of the chemical, electrical and insulating fields. Fireproof draperies, curtains and awnings have been made from it. Clothing for firemen has been mentioned, while advertisements in magazines show its use, after painting, in camouflage work. There is no doubt that it is weather-resistant! And a note on its excellent fire-resistance is not out of place. Wool and cotton textiles can stand temperatures up to 400-500 degrees F. for only a short time, even when treated. Asbestos will stand 600 up to about 1000 degrees F., but glass does not melt until 1,500-1,600 degrees F. is reached.

In closing this series of articles, we would like to point out that at first one protective finish was added to a textile fabric; it was made and sold because it was water-repellent or would not mildew, or flannels or curtains were treated so as to resist flame. Gradually, two of these features were combined, often to mutual advantage. Thus, water-repellency and mildew-resistance give two features in one simple application. Fire-resistance has now reached the stage where all three protections are needed together, are convenient to apply together, without excessive cost. Weather-resistance is even a more inclusive term as it means the protection of the fabric from influence of exposure for a long period of time, come what may—sun or rain, fire or molds, snow or heat. These double and triple effects have been noted by our government procurement agencies and the tendency has been to ask for them, even on paper. Doubtless much of the knowledge and experience, and perhaps even the machines and chemicals, will be here for our use after the war. A great field of new finishes, more lasting and protective finishes, is open for our experiments, our advertising men, and for the public good. Utility and beauty may be combined and help both our pocketbooks and our enjoyment.

Textile Mills Get AA-2X Rating

Textile mills are included in the group in the textile clothing and leather industries that have been granted AA-2X priority rating on repair and operating supplies. This is the highest rating after strategic military priorities granted by WPB.

The rating can be used for operating supplies, maintenance equipment, repair parts and other items needed to keep machinery and plants in sound working condition. It may also be used to obtain packing and shipping materials, with the exception of wooden and fiber board containers, which are in urgent military demand, textile fabrics and products such as rope, twine and burlap bags.

The rating may not be used, however, to obtain machinery other than repair and maintenance parts.

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They carry first aid kits instead of guns . . .

They work with stretchers and surgical bandages instead of mortars and grenades . . .

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"They'll Never Miss the Little Bit I Do"

• *We were greatly impressed by this timely and pertinent message that we found in "The Pepperell Sheet", the excellent publication for the employees of the Pepperell Mfg. Company. We believe it carries a thought of value to mill executives and employees everywhere, so we are reproducing it in full below:*

"Well—I guess I'll lay off today and catch up on the sleep I lost last night. That was a pretty late poker game and I didn't get to bed as early as I usually do and I need some sleep. They won't miss me at the plant today. The little bit I contribute can't amount to very much."

"Boy, oh boy—what a day! Did you ever see such sunshine? This is no day to go to work. I'm goin' to knock off and take a good walk for myself in the woods. The old job will keep and the guys at the plant'll never know I wasn't there."

"With the money rolling in pretty good these days I guess I can take the day off and go shopping. Gee, I haven't been up town for so long I won't know what the old place looks like. And besides, I'm not needed at the plant. What with all those people working on my shift they'll never miss the little bit of work I do, and anyway they can get somebody else to run my machines."

There seems to be a new game that is being played by too many civilians these days and it is causing havoc with the war production in a good many plants. It seems to have a high-sounding name. They call it Absenteeism. Back in school days we used to call it by its right name, "playing hookey".

The Japs and the Germans never heard of it and they aren't playing it.

Thank goodness our own boys in the armed forces aren't playing it.

Have we who are working in the mills and plants and factories of this great nation any right to play it?

No! Emphatically No!

At the top of this page are three conversations which might have been made by three different people last week or this week, or even this morning. Anyone who talks like that, even to himself or herself, just plain hasn't got his or her heart in the right place.

There is, however, one big thing about these conversations that is definitely wrong. Each one of those people said something about "they'll never miss the little bit I do." Just suppose that everybody in the plant talked that way. What would happen? Sure, each and every one of us contribute only a little bit, but if you add all these "little bits" up it makes a great big total, and it's the total that we're all interested in these days. One little bit dropped out here and another little bit dropped out there spoils the whole thing.

When I said that our own boys in the armed forces weren't staying away from work just to take a day off, you know that I was telling the truth. These boys who are fighting our battles know what a grim, dirty business this war is. They know that they've got to keep at it out there on the front line until every rotten Jap and deceitful German is put in his place. These boys of ours know that they can't take a day off just because they feel like it or because the sun is shining. They know they've got to stay right in there every single minute and fight as hard as they can to get this war over with as soon as possible.

Is it fair to them for us to stay away from work a day here and a day there simply because we have more money than we used to have, or because we don't happen to feel like going to work?

Of course it isn't. And thank goodness everybody isn't doing it. But there are entirely too many people who are doing it.

About a week ago I met one of our employees on the street, and I stopped to talk with him. He is a man who has been with Pepperell for 27 years. He is the father of three boys, two of whom are in the Army. We got to talking about this business of people staying away from work every now and then. I was very much interested in the fact that he just couldn't understand how people can do it. His thoughts were best expressed when he said, "People in mills and factories don't realize that they are just as important as soldiers in the Army." And there is a powerful lot of truth in what that man said. We are soldiers in the army of production, and unless we make the goods and the sheets and the shells and the tanks and the parachutes, and get those goods to the men in the Army and Navy, those men aren't going to be able to win this war.

DAVID S. COOK,
Mill Manager.

The Post-War Planners

(*Continued from page* 58)

the unions violently and forcibly resist any readjustment of wages. This was the case after the First World War and was one of the prime contributing causes of The Great Depression. There were millions of people unemployed because they couldn't get employment at the union scale and refused flatly to work for any less. There were other millions who simply could not afford to buy the things these people made if they were paid the union scale of wages, and so there was a stalemate which resulted in continuing widespread unemployment. There is reason to think that when this war is over, the unions are going to stand pat on maintaining the inflated wartime wage scales, and that they will try to protect the jobs of their membership at the expense of demobilized soldiers and sailors. We need to develop as quickly as possible a sane and reasonable labor policy which can be accepted by the majority of the people, and without it, we may have some domestic disturbances after the war that will so completely overshadow everything else that we will have little interest in foreign affairs.

. . . HE HAS HIS HANDS FULL

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You can help him. Not necessarily because you're philanthropic, but because it's to your own interests to lend a hand. It's only good business to help your railroad shipments go through undamaged . . . to prevent waste of materials, manpower, machinery, time and shipping facilities.

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CURRENT TEXTILE TOPICS

All-Out Effort Under Confusion

SOME WEEKS ago the president of the American Woolen Company, Moses Pendleton, stated that the mills "have signified their determination to go all-out for Victory." He was speaking of his division, but his remarks apply readily to all types of textile manufacture and we think it pertinent to quote him further on certain essential matters in the all-out effort, as follows:

"The outlook for the wool textile industry for 1943 may be summarized as a period of profitless prosperity, for while the mills are assured of sufficient volume to keep machinery busy, the yield to mill-owners and stockholders will be relatively small. In the war economy, it is becoming increasingly difficult to build up an adequate surplus and to maintain machinery effectiveness that indubitably will be required to deal with postwar problems."

During the first quarter of 1943, developments in Washington not only have been emphasizing this problem of the future, but they have been confusing the immediate situation. One Government agency urges mills to step up production and another stifles incentives of manufacturers with re-negotiation measures on contracts. Inflationary conditions, latest the 48-hour order, are created and yet unreasonable anti-inflation ceilings are maintained on prices for cotton goods.

Inflation Shadow Found Lengthening

Before the start of this year, the signs of pressure against OPA controls were manifest and at least tacitly admitted by the erstwhile price administrator, Leon Henderson. Before the President's order of February 9 for a 48-hour week, moreover, it was commonly recognized in the market for cotton sales yarns that production was being restricted by advanced costs and the established ceilings.

At the same time manufacturers of goods were being harassed by action for re-negotiation of contracts after receiving praise for their co-operation and they also, in some divisions at least, were hampered by ceilings which were no inducement toward production for military purposes. Thus the government was erecting a barrier to the very increase of production which the WPB was urging.

On top of this situation came the President's order for a 48-hour week, including in its purview many important cotton manufacturing areas. Simultaneously the administration announced its determination to continue the fight for stability in the cost of living. By some occult reasoning, it was figured that the 48-hour week, with extra pay above 40 hours, was not inflationary on costs. But this was hardly allowed by textile manufacturers and the feeling long has been that efforts to check inflation must be overall and not discriminatory, to succeed.

Vast Cotton Goods Call Demands Cooperation

Trade comment on the 48-hour order reflected a favorable attitude toward the objective, viz., the most efficient use of the manpower of the nation. This became the more imperative when General Marshall presented evidence to the Senate and House Military Affairs Committee of the need of 11,000,000 men in the armed forces by the end of this year. With more and more men called away from civilian pursuits, the shrinking remainder are facing increased demands.

Here are the paradoxical elements of a war economy, in one direction. They are a big problem in the industry by reason of the triple demand for goods——civilian, military and lend-lease—and the direct loss of workers, accentuated by a serious further loss through absenteeism. Incidentally, incentives toward steady work to offset absenteeism are virtually eliminated by the government policy of re-negotiation.

Establishment of the 48-hour week, it was accepted, would certainly help the production situation if the overtime provisions of the Fair Labor Standards Act were suspended. Such a co-operative measure was felt to be needed in the all-out effort which calls for a vast production of cotton goods. Under the order as given, it tended to aggravate a situation wherein mills already were not given real profit inducement to produce for the war need.

"Utility" Production to Relieve Scarcity

Simplified production, or "utility" lines as developed in England, has at last come to the fore under the war economy as the way to make the most of mill facilities. The WPB made an appeal the first of February for a new production record this year, but this appeared to be an uncertain prospect except as expansion could be achieved by some such expedient in certain mills. Mills on basic army fabrics, for example, were reported to have reached their capacity last spring.

It was recognized that other mills could join in a program sponsored by the government for simplification of output, with concentration on the faster-woven goods and fewer numbers. Came on February 11 the announcement of the first government action to encourage production of utility lines, with ceilings for a new cotton cloth devised through WPB co-operation with textile designers, to replace a scarcity of 80x80 print cloths. A range of widths in various carded gray goods and colored yarn cloths was involved, ceilings effective February 16.

Conditions of supply and demand, meantime, have been greatly confused as reported from the goods market. How much business has been done on lend-lease or war-aid account has been obscure. A little relief from pressure for military goods was indicated in cancellations on such goods and bandoleer sheetings early in February, with some fears created that excess supplies had been accumulated in other directions.

Trading for civilian account, nevertheless, was indicated to be exceedingly low at mid-February. Some uncertainty over the extent of such business was found. Reports suggested that goods were being allotted quietly from time to time, with production heavy. In the final analysis, there was little to show a real civilian movement.

New England Mill Situation

MID-FEBRUARY found many civilian trade buyers getting an opportunity to secure moderate-sized individual lots of combed cotton goods. The yardage sold was chiefly in spots or nearby deliveries. It looked like a temporary movement, from a little accumulation of previous weeks of a quiet market. The spurt at the moment involved an aggregate of hardly more than a few million yards.

Sellers were perplexed, meantime, over the situation on government orders. Nothing definite was known as to whether the government had stopped placing additional orders for certain goods on which contracts were being completed. In addition the mills were confused over reports on cancellations

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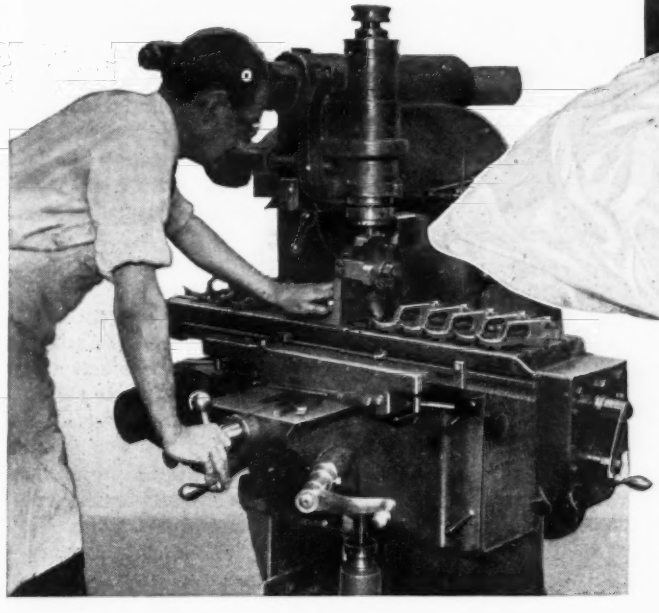

Illustration of one of the many intricate Milling Machine operations required in the production of vital Automatic Rifle Trigger Guards.

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of certain contracts. Yet one report early in February that balloon cloth was an item for cancellation was followed in a week by rumors that the Army wanted more such goods.

Where military goods might be surplus and available for civilian use, mills ran into discouragements such as stipulation that they could not legally be put to such use based on the prices paid the government. Converters talking with mill men about plans for the fall season, moreover, learned that government policies and preference orders made it almost impossible to determine what would be available for new civilian lines.

Spinning and Weaving Mill Problems Faced

Production difficulties were facing both spinning and weaving mills to the point where they could not restore the capacity operations urged by WPB. A progressive squeeze of civilian consumers was evident in the yarn trade as dealers hardly could fill anything but the highest priority orders early in the year. The decreasing labor supply and absenteeism were aggravated by extreme weather and fuel shortage.

Lack of trained workers was also reported to have led to idle loomage in some of the mills. An appeal was to be made to all textile mills to go on the 48-hour basis, it was stated on February 15. The situation was complicated by the cost factor, even as in yarns the higher manufacturing cost was already cited as too low to allow manufacturing profit under the existing ceilings. Yet in goods the talk was more cuts coming in ceilings by OPA.

Manufacturing troubles were reflected in the statistics of spinning through the first half of the present cotton season. Cotton consumption in New England continued through January to lag behind that last season. In fact January showed a sharp relative loss, at 95,957 bales, against 114,985 for the same month of 1942. This put the record for six months at 599,286 bales, against 642,683 for the first half of 1941-1942.

Distracting Policies Worry Manufacturers

Mill men were being virtually distracted by developments emanating from OPA which appeared to them to be wholly irreconcilable with the avowed purpose of the government to spur capacity production. Studies of costs are made by OPA and findings ensue which are baffling to manufacturers.

Under conditions of war, it is hardly possible to establish high efficiency in production. To reach capacity, all kinds of plants and equipment must be drawn into service regardless of production cost. The war itself draws away from efficiency, notably in the dislocation of skilled workers which alone has cut down production.

From the first the idea has been that the war must be won at any cost. That does not mean reckless disregard of restraints on spending for war purposes, but it should mean a co-operative effort by government agencies to spur private enterprise toward the desired goal of production needed for victory.

Whether by unavoidable circumstance beyond government control, or otherwise, labor costs and commodity prices have tended to reduce margins of profit for mills. Yet OPA officials work on some yardstick of their own to find that ceilings are not only reasonable but too high after these major costs have risen. Thus mills which have co-operated unstintingly in the war effort found themselves confounded and perplexed on how to continue.

"THE SITUATION" as Seen Across an Executive's Desk

February 18, 1943

Inflation

Economic Czar Byrnes made a nice-sounding speech recently on the problems and controls of inflation. He spoke of its dangers and the means used and the safety factors being employed.

The one thing that was disturbing in his talk, after he had referred to the Little Steel Formula and how it would be strictly followed, was the announcement that all essential industries should and must operate on a 48-hour week with time and one-half for the extra eight hours. This meant that all wages in essential industries automatically increase.

Already wage increases are far in advance of living costs, creating a surplus of spending money far above the amount of goods available. This automatic increase will not only increase the threat of inflation, it will also increase the cost of manufacturing commodities.

The War Manpower Commission will greatly decrease the productivity of industry if it carries out its intention of allowing too many men now in industry to be drafted into military service. The home front must not be impaired. The ratio of men making materials and furnishing food must be kept in proper balance with the military front.

Administrator Byrnes' speech and its pronouncements put just a little more air in the inflationary program. Farmers are now working for upward trends and thus the spiral turns.

Manpower Shortage

According to the *New York Times*, there are at present about 53,300,000 persons actually at work or under arms. During 1943 this figure must be increased by 3,000,000 and 3,000,000 workers must be transferred from civilian to war industry.

To bring these new workers to the factories several measures were either placed in effect or under consideration last week. One was a bill introduced into Congress by Senator Austin of Vermont and Representative Wadsworth of New York calling for the draft of all the nation's manpower for the war effort.

The bill makes each person between 18 and 65 liable for personal noncombatant service in the war effort. Under it the Government may call for volunteers or, if that is impracticable, it may directly draft and assign those selected to work and transfer them from one factory to another, as the war effort requires. The bill contains provisions that in making these assignments due regard must be had to assigning the selectees near their home communities; that reasonable housing facilities must be available if they are away; that compensation shall be paid applicable to the type of work to be performed.

Another measure designed to increase the nation's work forces was contained in an executive order from President Roosevelt. It directed all industry in 32 areas of labor shortage about the country to go on a 48-hour work week. At present, industry as a whole averages about 44 hours a week, with war industry working above the average and civilian industry below. It was estimated that if the President's order could be applied on a nation-wide basis it would have the effect of adding 1,500,000 persons to the manpower strength.

An Inconsistency?

With wages moving gradually up, with farm prices moving gradually up, with costs of manufacturing moving gradually up, with government officials calling on the mills to increase production, there are certain OPA officials now threatening to lower the ceiling price of many cotton goods constructions.

The ingenuity of the textile mill

The Red Cross has Problems like your own

—*of Planning*

Your Red Cross operates a vast planning program to enable it to be ready for any disaster or emergency anywhere—whether it comes in the Americas, Europe, Australia, Asia, or Africa.

—*of Organization*

Your Red Cross is responsible for the smooth operation of 3,750 chapters and 6,000 branches, all engaged in the same enterprise of helping all who need help.

—*of Personnel*

Your Red Cross has tripled its staff since Pearl Harbor and has had to enlist the aid of and train over 6,000,000 volunteers in the principles of First Aid, Water Safety, Accident Prevention, Home Nursing, Nutrition, Nurse's Aideing, Mass Feeding, Motor Mechanics, and other subjects allied to our country's war effort.

—*of Production*

Your Red Cross is not only one of the world's foremost purchasers of supplies, but it has the immense distribution job of collecting millions of items from 10,000 different communities in the United States, assembling and storing them, and then shipping them to practically every country in the world. Last year your Red Cross shipped some $60,000,000 worth of food, clothing, and medical supplies to over 20,000,000 homeless people in foreign countries.

—*of Finance*

Your Red Cross, whose war-time and post-war expenses will run well into hundreds of millions, must account to the public for every penny it collects and puts to work. Its accounts are audited annually by the U. S. War Department.

The Red Cross faces the same problems as are in your business. With your support it can successfully meet them.

The Second War Fund is greater than the First, but no greater than the increased needs.

Business men can help with time and with money, as organizations and as individuals.

March is the Red Cross month . . . Cooperate with Your Red Cross Chapter.

Your Dollars help make possible the

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managers is already taxed with rapidly depreciating machinery, difficulty in securing repair parts for maintenance, difficulty in keeping efficient manpower, difficulty in securing materials and many other necessities.

Taxes are mounting, people are growing tired under the strain of the continuous drive for production, mill contracts are being drastically renegotiated and future business offers no incentive other than patriotic duty.

There will be a day when this war will end and then there will come the difficult days of reconstruction, or replacement of machines, of expansions and renovations, a job of caring for the final adjustment of the now terrifically dislocated labor market. Industry must be permitted to have some financial safety in order that it may carry on its system of free enterprise. The government seems now to have forgotten the problems and costs of reconstruction.

Wickard and Cotton

Secretary Wickard created quite a furore in cotton circles recently when he said: "On Southern farms it is important that farmers give attention to planting up to their full cotton allotments, where such action will not tend to decrease war crop production. This is especially true in areas where expansion in war crops is not feasible and in areas adapted to production of longer staple cotton."

Farmers might plant up to 27,400,000 acres and be within their allotment. The goal, however, was set at 22,500,000 acres. Farmers might exceed the goal by between three and four million acres and still be within their acreage allotment. The emphasis placed upon increased cotton acreage is recognition of the vital importance of cottonseed meal and hulls for dairy feed, and even greater need for cottonseed oil.

Corley and Cotton

Hon. Si Corley, Commissioner of Agriculture of Mississippi, in discussing cotton consumption and prices for 1943, says that in 1942, the United States produced 13 million bales of cotton, compared with 10.7 million in 1941. Mississippi's production in 1942 was 1,975,000 bales, compared with 1,424,000 in 1941.

This great crop was produced by a minimum of equipment, and fertilizer, but blessed with the unstinted co-operation of Mother Nature.

The domestic supply of American cotton this year is estimated at about 24 million bales, compared with 22.6 million bales last season and a 1936-40 average of 22.2 million bales. The increase over last season is attributable to the sharp increase in production more than offsetting the decline in carry-over or 1.6 million bales. The carry-over contained more "high-up" cotton than was generally expected, but the new crop averaged shorter than the 1941 crop.

It is estimated that consumption will be about 11.6 million bales during the current season, compared with 11.2 million bales last season. Despite this increase it is felt that the carry-over on August 1, 1943, will be larger than at the beginning of the present season. This carry-over will consist of a majority of cotton that has been picked over, and it is of the lower grades and shorter staples. Cotton graded as Strict Low bright is beginning to be used and as the stock of better grade is depleted, we can expect a greater demand for the lower grades.

Cotton farmers have sold and are now selling their 1942 crop for the largest returns since the 1920s. The October, 1942, farm price of lint was 18.87 cents, the highest for October since 1927, but less than the April and May prices of 19.03 and 19.17 cents respectively. It is believed that Middling and better grades of cotton will mount to around 21.00 cents by May 1, 1943.

Post War Planning

That a Congressional committee shall be appointed to study post-war economic problems, is a recommendation made recently by Senator George to the Congress.

Such action seems logical and practical, because there will be much legislation dealing with these problems. They will be intricate and far-reaching in their applications, hence they will need much study—possibly more than can be given to them if such study is delayed until the actual need arises.

One problem that seems to be uppermost in the minds of many people and that must be decided before any detailed plans can be considered, is the decision as to whether or not this nation will continue to work on the principles of a planned economy or shall there be a more pronounced return to the American system of free enterprise and individual initiative?

Will the principles of control now in effect abide with increasing intensity or will there be a gradual removal of controls so that business in all of its related forms can assume its rightful purpose and desire in working out its plans for peace and reconstruction? This question alone will require much study in order that facts may be available to convince many people in this commonwealth that the safety of this nation lies in a free people.

The Four Freedoms can never be actually attained in a rigidly-controlled economy. Too many people who have a personal interest in the welfare of government as it is now being operated will be loathe to change into jobs which require individual initiative and personal responsibility.

The hypnotic influence of government controls has appeased too many in relieving them of their personal responsibility. Too many have thrown all of their cares and responsibilities on government and walk the pathway of life with no apparent concern.

The people must support the government and the government must never assume the role of supporting the people. The people must be aroused to their individual responsibilities if peace is to abide and if reconstruction is to be effective in economic application.

This is the first problem that a Congressional committee will have to solve.

Cotton Parity

The Pace Bill passed by the House Agriculture Committee for consideration by the House provides for farm wages to be included in the formula used in computing parity for farm products.

According to the figures of the New York Cotton Exchange Bureau, this bill, if enacted into law, would increase the price of cotton 15.2 per cent above its present price.

The current parity price of cotton as of the middle of January this year was 19.59 cents per pound. The price of this cotton under the provisions of the Pace Bill would be 22.57 cents per pound.

Again the mills are about to be caught in a legislative squeeze, because of a lack of co-ordination. Wages are being inflated. The price of cotton will likely be inflated. The lowering of prices of textile products is threatened. This does not add up with sense. No one wants inflation so it seems that the government is going to use the mills to prevent it.

Pay-as-You-Go Plan

The Ruml Plan of paying income taxes, or some compromise of it, is actively engaging the mind of Congress today. Income taxes are always a problem and now under the broad coverage, together with the excessive levies, the subject is not only a problem of collecting, but one of paying. Some shift in the manner of collecting and paying seems evident and necessary. The problem is complicated by the delayed period on which we ordinarily pay taxes, which must be considered in working out a current payment and collection.

The problem of forgiving or delay is

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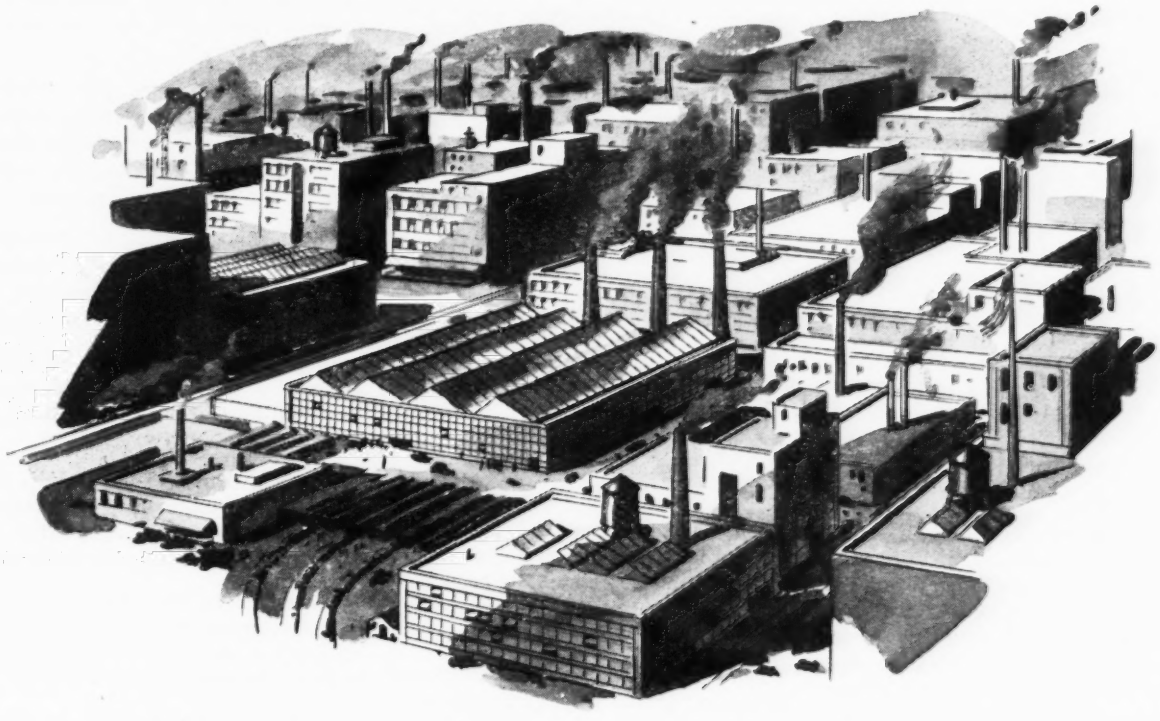

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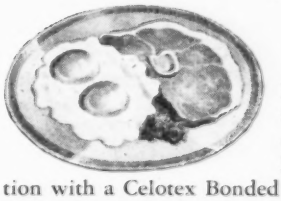

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complex. The vast number of people involved and their peculiar and individual status make it more complex.

In various quarters it is declared that, for at least 27,000,000 taxpayers, a shifting from the present taxpaying system to a complete pay-as-you-go could become automatic and effective, as soon as collection machinery could be set up, by the acceptance of the most-talked-of compromise on the Hill.

Under this plan the normal tax and first-bracket surtax on 1942 incomes would be forgiven. This would relieve from payment of last year's taxes those whose entire income was derived from wages or salaries and whose total income, after deductions, did not exceed $2,000 a year. These are the 27,000,000 mentioned above.

However, it is brought out, an estimated 40,000,000 persons will file returns on 1943 incomes. Of the 40,000,000 expected to file returns on 1943 income, it is estimated in various quarters, some 36,000,000 do not have incomes, in excess of exemptions, above $2,000 a year. Patently, it is pointed out, they could not pay increased 1943 taxes currently and at the same time pay off their levies on 1942 income. This fact has given rise to the plan for the proposed forgiving of the normal and first-bracket surtaxes. And this, Ruml plan supporters hold, would put such a burden on the high-bracket income earners, in paying double to get up-to-date on taxes, as to make the total far in excess of 100 per cent of 1943.

What the Textile Mills Are Doing

Fawcett Mills, Inc., New Bedford, Mass., recently chartered with a capital of $100,000, has taken over the former mill of Burgoyne Silk Mills, including purchase of about 120 looms and auxiliary slashing, warping and spooling equipment. The new owner will continue in the same line of rayon piece goods manufacture. William Fawcett, formerly connected with Arkwright Corp., Fall River, Mass., heads the new company.

Among the textile manufacturing plants recently receiving the Army-Navy "E" award for excellence in war production, in addition to the awards already reported, are: Aragon-Baldwin Cotton Mills, Whitmire (S. C.) plant; Equinox Mills, Anderson, S. C.; Pacolet Mfg. Co., Mill No. 4, New Holland, Ga.; Ware Shoals Mfg. Company, Ware Shoals, S. C.; and Brookside Mills, Knoxville, Tenn.

Merrimack Mfg. Co., Huntsville, Ala., won the state-wide textile safety contest for 1942 in the weaving-and-spinning classification, and Boaz Mills, Inc., Boaz, Ala., won the award in the spinning classification. Merrimack operated with only two lost-time accidents and Boaz with only three during the year.

McGregor Mfg. Co., 303 Fifth Ave., New York City, manufacturers of men's sportwear and work clothes, has leased the former mill of Gotham Silk Hosiery Co., Dover, N. J., and will use it for the manufacture of clothing for the armed forces.

The Pelham Mills plant, Pelham, S. C., about 10 miles from Greenville, was recently destroyed by fire. The building had not been operated as a textile unit in recent years and has been used as a cotton warehouse. No machinery was involved.

The worsted division of Pacific Mills, Lawrence, Mass., has contracted with the Lawrence Gas & Electric Co. for electric power service, and will close part of the large power plant at the mill as soon as the new source of power supply is made available.

Elmira Knitting Mills, Elmira, N. Y., manufacturers of rayon and cotton underwear and outerwear, have purchased a number of machines from the liquidated plant of Amazon Knitting Co., Muskegon, Mich.

The Lyman Division of Pacific Mills, Lyman, S. C., has awarded contract to C. M. Guest & Sons, Anderson, S. C., for the construction of a new filter plant at a reported cost of about $125,000.

Interstate Hosiery Mills, Inc., has sold its mill at Bloomfield, N. J., to the H. & F. Company, which will lease it to other interests. Interstate is concentrating production at its mill in Lansdale, N. J.

Swift River Woolen Co., Stafford, Conn., manufacturers of woolen goods for women's wear, has begun rebuilding a three-story mill, following a recent fire loss of about $100,000.

Northville Gloves, Inc., Northville, N. Y., has been incorporated to operate a local knitting mill for the manufacture of gloves, mittens and other knitted outerwear.

C. E. Foster, Shelby, N. C., has started a new hosiery mill in a recently-acquired building. Installation will comprise 16 knitting machines and 40 loopers.

Phoenix Dye Works, Chicago, Ill., operating a bleachery and dye works on cotton and woolen yarns, has plans under way for a new one- and two-story addition.

Hanes Dye & Finishing Co., Winston-Salem, N. C., has purchased a one-story building from the North State Bonded Warehouse, and will improve and occupy it for warehouse purposes.

Rhyne-Houser Mfg. Co., Cherryville, N. C., has completed construction of a one-story community house for mill employees.

Industrial Rayon Corp., Cleveland, Ohio, has taken out permit for two new additions to the plant, at an estimated cost of $100,000.

Lebanon Knitting Mill, Inc., Pawtucket, R. I., has awarded general contract for the construction of a one-story addition to the mill boiler house.

Holston Mfg. Co., Knoxville, Tenn., manufacturers of men's and boys' hosiery, has established a new branch mill at Sevierville, Tenn.

New Publications of Textile Interest

The Permutit Company, 330 W. 42nd St., New York City. "Ion Exchangers for Industrial Processes", a pamphlet describing the company's facilities in the field of ion exchange for non-water conditioning uses, expanding the application beyond 30 years experience with the application of ion exchangers to water conditioning processes.

Sylvania Electric Products, Inc., Salem, Mass. "Timely Wartime Tips on Fluorescent Maintenance", a pocket-size book outlining the setting up of a regular maintenance routine for fluorescent lamps, telling how to determine the frequency of a regular cleaning schedule, and how to figure the number of lamp replacements per month.

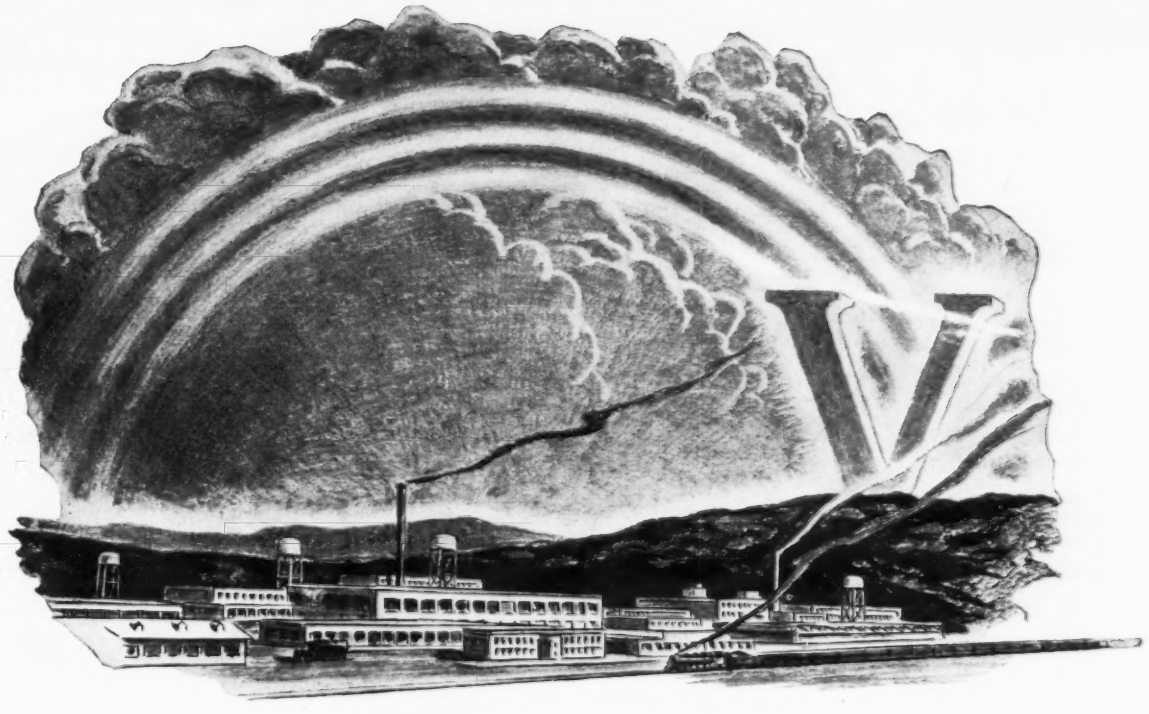
Lubriplate Division, Fiske Brothers Refining Co., 129 Lockwood St., Newark, N. J. Bulletin No. 1-43, giving valuable information on the installation, care and lubrication of ball and roller bearings, of especial interest to operating and maintenance engineers.

Devoe & Raynolds Co., Inc., New York City. "These Plants Make the Paint that Preserves America", a pictorial brochure of the company's plants and manufacturing facilities. In addition to the laboratory, paint and varnish manufacturing plants, the new brush plant at Princeton, Ind., and its operations are also shown.

Oakite Products, Inc., 22 Thames St., New York City. A 24-page booklet describing how Oakite steam-detergent cleaning is being used in textile and other industries. One application described is that of a New England mill which uses the steam-detergent method to remove tenacious coatings of oil, dirt, grease and other matter from old looms and other equipment before repair and conditioning.

J. W. Mortell Co., Kankakee, Ill. "No-Drip Handbook", a 32-page book discussing the prevention and cure of damaging condensation and sweat that forms on metal pipes and fixtures, basement walls, ceilings of concrete, wood, plaster, etc.

Afterwards, A Rainbow of Promise



JUST as the first recorded rainbow ushered in a new earth, so shall the approaching rainbow of Victory surely inaugurate a new world conception. Different spiritually, socially, technologically and economically.

Industrial research in the United States to the extent of over $300,000,000 a year is prophetic of amazing changes. Unparalleled opportunities will challenge free enterprise.

A renaissance in the textile industry is inevitable. Already new synthetics have proved themselves in the fiery trial of war. Products and fabrics, the like of which the consumer has never seen, will flood markets capable of absorbing them. Competition, with old familiar goods, will be at high pitch. Today is none too early to lay plans for the renaissance.

Kaumagraph in its more than 40 years' service of supplying the Identification requirements of textiles has always kept pace with improved textiles, new methods. Indeed, Kaumagraph's continual research has been the key to many textile advancements.

Perhaps today, Kaumagraph's knowledge of new things to come, Kaumagraph's successful solution of some knotty wartime Identification problems, may help you prepare for the postwar challenge which will confront you. Why not send for a Kaumagraph Identification Man now?

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TIMELY NEWS ITEMS with a TEXTILE SLANT

Fred W. Climer has returned to the **Goodyear Tire & Rubber Co.**, Akron, Ohio, as assistant to E. J. Thomas, president, after several months with WPB in Washington. He will direct all personnel activities of the Goodyear Tire & Rubber Co. and the Goodyear Aircraft Corp.

Dr. J. Watson Pedlow, assistant to **George M. Allen**, manufacturing manager of **American Viscose Corp.**, Wilmington, Del., has received a commission as Lieutenant (j.g.) in the U. S. Naval Reserve, and has assumed his duties with the Navy.

George Westwater, chief engineer of **Kearny Manufacturing Co., Inc.**, 681 Schuyler Ave., Kearny, N. J., since 1934, has been appointed vice-president, to succeed **W. R. Slimback**, who has joined the armed forces.

Alphonse Pechukas has been appointed research director of the **Columbia Chemical Division** of the **Pittsburgh Plate Glass Co. Dr. Franklin Strain** has been named assistant research director. Dr. Pechukas, only 28 years old, is among the youngest directors of research in the industrial field. He joined the company's chemical division in 1937 as a laboratory research worker.

Dr. Pechukas

Dr. Strain

J. Warren Kinsman has been appointed assistant general manager of the organic chemicals department of **E. I. du Pont de Nemours & Co.**, Wilmington, Del., to succeed the late **Cesare Protto. Dr. J. A. Almquist** succeeds Mr. Kinsman as assistant general manager of the plastics department. Mr. Kinsman joined the company in 1915, and was made a special assistant in the dyestuffs department in 1921. Three years later he was named assistant director of sales in that department, and became director of sales of organic chemicals in 1929. His appointment to the managership of the alcohol division came in 1931, and 10 years later he was made assistant general manager of the plastics department.

Harry E. Beane has been made sales manager of **The Bristol Company**, Waterbury, Conn. He joined the company in 1920. From 1925 to 1930 he was district manager in Birmingham, Ala., and later became field sales manager. **E. L. Stilton**, with Bristol since 1920, has been made assistant sales manager. **L. G. Bean**, formerly vice-president and general sales manager, has been appointed vice-president in charge of engineering and sales.

Mr. Bean

Mr. Beane

The Atlanta headquarters of **Iselin-Jefferson Company**, in charge of C. A. Peterman, has been moved to larger quarters in the Walton Building, where the offices and show room now occupy Rooms 216 and 217.

Horace Shapiro has joined the research department of the Rhode Island Laboratories, Inc., a subsidiary of the **Warwick Chemical Co.**, West Warwick, R. I. He will hold the position of research and development chemist in the field of phosphorescent and fluorescent pigments. He is a graduate of Ohio State University, and for the past two years has been open hearth metallurgist for the Inland Steel Co.

John M. Davies has been named director of physical research of **The B. F. Goodrich Co.**, Akron, Ohio, it is announced by **Dr. H. E. Fritz**, company research director. He has been in the research division since 1926. He was an instructor in physics at the University of Akron before joining Goodrich.

The Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J., has been awarded the Army-Navy "E" award for excellence in war production.

The **Huntington Works** of **The International Nickel Co.**, at Huntington, W. Va., has received its fourth production award for war production, giving it the right to fly the Army-Navy "E" with three stars. Previously it had received the Naval ordnance award, followed by renewal in the form of the All-Navy "E" award with one star and later the Army-Navy "E" with two stars. Each star represents the renewal of production honors for a six-months' period. The original award was for a 12-month period.

New Fabric Developed for Mountain Troops

To meet the need for an extremely tough uniform fabric for clothing for mountain troops, textile experts of the Quartermaster Corps in co-operation with textile manufacturing companies have designed and developed a new sateen material with an extraordinarily high tearing strength, superior wearing qualities and excellent wind-resisting characteristics which make it one of the finest cotton trousering materials ever produced, the War Department reports.

The new fabric is a five-harness sateen, 9.0-ounce material made from long staple, combed cotton yarn. The yarn is the same as is used in the 8.2-ounce khaki twill, and can be fabricated into the new sateen by many of the same mills that manufacture the twill simply by shifting the filling construction and the warp pattern for the sateen weave. It is treated with a water-repellent chemical material.

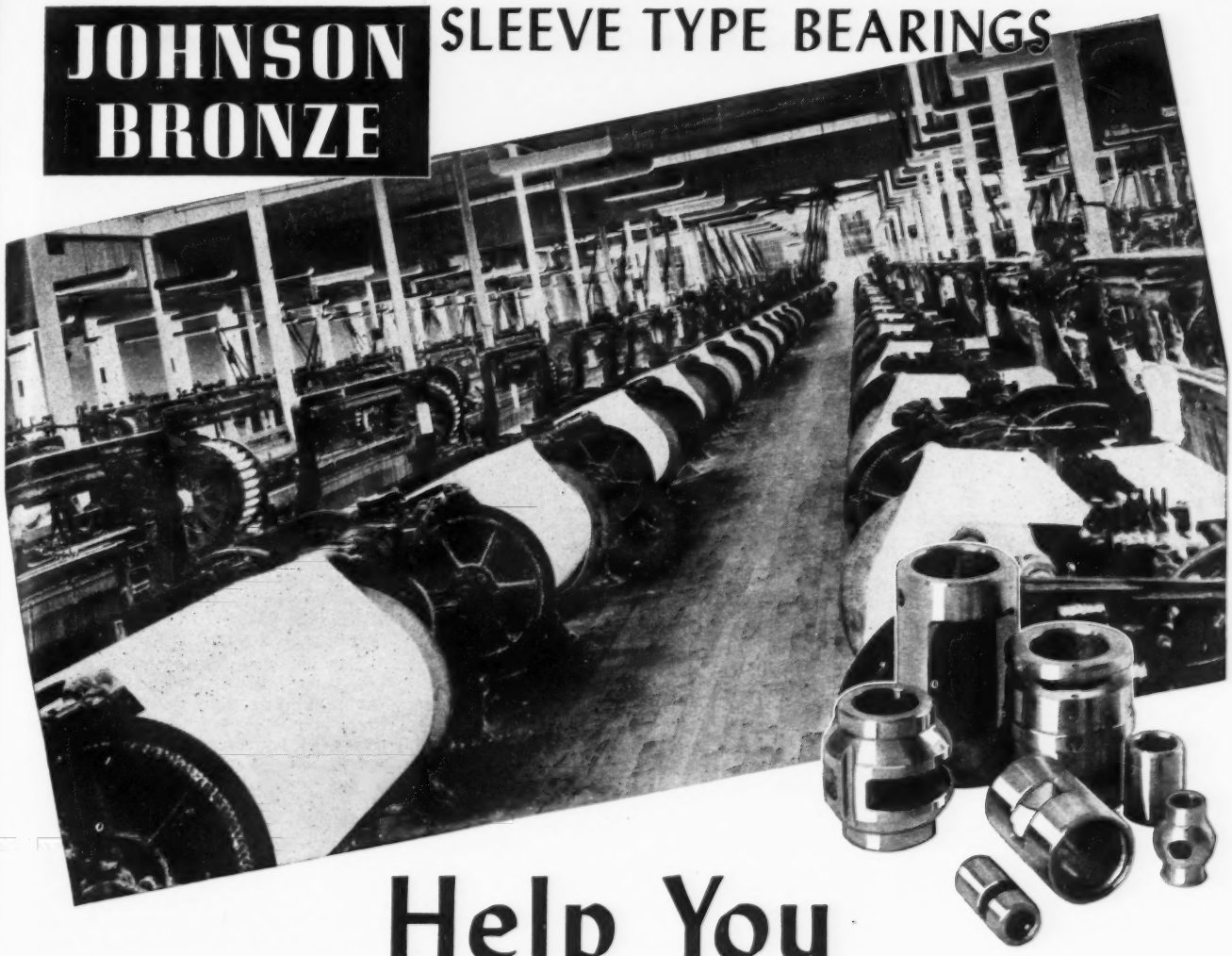
A notable feature of the new material is its extraordinary resistance to tearing. Tests have shown that it has a greater resistance to tearing and snagging than any other comparable material. Tests have shown that even when a hole is cut in the material, it is hard to enlarge the hole by tearing.

◆

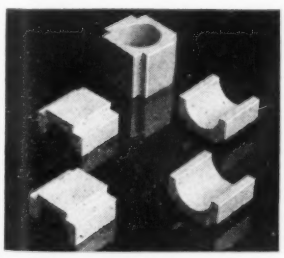
"Crown" Tested Licensees

Fairlawn Finishing Company, Fairlawn, N. J., and Glenlyon Print Works, Phillipsdale, R. I., have been appointed finisher licensees under the American Viscose Corporation "Crown" tested plan, as being fully qualified to dye and finish rayon fabrics in accordance with the new "Crown" tested minimum requirements.

JOHNSON BRONZE SLEEVE TYPE BEARINGS



Help You Step up Production



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530 SOUTH MILL STREET • NEW CASTLE, PA.

COMMENT on the COTTON MARKET

New Orleans, February 16, 1943

WASHINGTON and world news dominated the cotton market during the past month. Rumors of various kinds from both of these fronts proved more or less disturbing until around the middle of February when reports from Washington indicated that the situation there as to farm legislation is clearing, with the farm bloc in control of both houses. This news stimulated demand for contracts and the market rose to new highs for the season for the nears. Shrinking certificated stocks was probably a factor in this advance as first notice day for March is rapidly approaching with only 18,696 bales available for delivery with the possibility that most of this stock belongs to firms who do not want to deliver it on contracts. The open interest in March in the two markets is around 200,000 bales. Spots also made a new high for the season with the average for Middling 15/16-inch going to 20.72. This is also the highest price on record since 1929.

Prior to this rally the market had been in a rut for some time with quotations moving irregularly from day to day and demand for contracts at a low ebb because of uncertainties prevailing over legislative conditions at Washington. The house agricultural committee voted a favorable report on the Pace bill to revise the parity formula but was unable to get this bill before the house up to this writing owing to the dilatory tactics of the rules committee which postponed giving it a place on the calendar for several weeks.

Other factors contributing to the change in the course of the markets were favorable report of the Senate agricultural committee on the Bankhead bill to prohibit the OPA from deducting benefit payments from parities in fixing ceilings on farm products and the vote of the house appropriation committee against the President's request for $100,000,000 to be used by the Secretary of Agriculture as a subsidy to increase production of certain food and feed crops. Other reports indicated that the Senate will take a similar stand. The farm bloc wants higher prices as an encouragement to increased production instead of subsidies. It also seems determined to force a revision of the parity formula along lines of the Pace bill. The increase in working hours of laborers engaged in war work from 40 to 48 hours with the time-and-half pay for the increased working time seems to have been accepted as inflationary and increases the probabilities of favorable farm legislation.

The Pace bill, which requires that all farm labor cost be added to the formula for calculating parity, will, it is claimed, increase the cotton parity 15.2 per cent. This means an increase from 19.59, the January parity, to 22.57. In the event that this bill is enacted into law the loan rate will be increased an equal amount. As the loan rate is not fixed until after the July parity is announced the probabilities are for an even higher parity by that time.

The Department of Agriculture announces in advance that the loan rate on the next crop will be based on Middling 15/16-inch, and not on Middling ⅞-inch as heretofore. The loan rates will be 90 per cent of parity and the rate for Middling 15/16-inch will be 85 points above the rate for Middling ⅞-inch. The commercial difference is 91 points.

Rumors from Washington that the sion of the parity formula and will administration is opposed to the reviseek, at the worst, to bring about a compromise when the Pace bill reaches the Senate, and practical withdrawal of mills from the spot markets were the principal depressing influences this month. Washington talk is that the administration will threaten a veto of the Pace bill if passed by both houses and that it hopes eventually to effect a compromise which will raise the cotton parity only 5 per cent. Recurring rumors of a possible early ending of the war have depressed the new crop months under quotations prevailing for the old.

Another factor tending to hold down values is the eleventh-hour effort of the Secretary of Agriculture to bring about an increase in the cotton acreage. The cotton acreage allotment was fixed at 26,585,000 acres in December at the time of the referendum. After farmers voted for the continuation of the marketing quotas, the Secretary of Agriculture requested them to hold the acreage down to 22,500,000. He now requests that they plant as much of their allotments as possible, after providing for food and feed crops, in order to furnish a larger supply of oil and feed from the seed. Inquiries made by private agencies indicate that farmers intend to plant only about 23,000,000 acres this year. Labor shortage, better pay for other crops and refusal of the draft boards to exempt farmers raising short staples are given as some of the probable reasons for a small acreage. Last year cotton farmers planted 23,310,000 acres on about the same allotment as for this year and harvested 22,660,000. These facts are accepted as pointing to a small crop.

The movement into the loan continues heavy and farmers are reported refusing to sell their equities except at high prices. A price of $15.00 a bale was recently reported paid in the eastern states. Loans reported up to February 6 amount to 2,390,900 bales. This compares with 2,055,446 reported to same date last year. Withdrawals total only 25,213 compared with 122,971 a year ago. Loans are now expected to reach 3,000,000. Farmers have until April 30 to put their cotton in the loan.

The New York Cotton Exchange Service estimates domestic consumption this season around 11,750,000 bales or about 500,000 larger than last season. This is exclusive of exports under lend-lease or otherwise. The Census Bureau reports consumption in January as 915,479 bales and 5,627,756 for six months compared with 5,390,724 bales consumed in the same months of last season. Mill stocks are given as 2,506,639 compared with 2,497,795 a year ago. Detail of the Census Report will be found in another column.

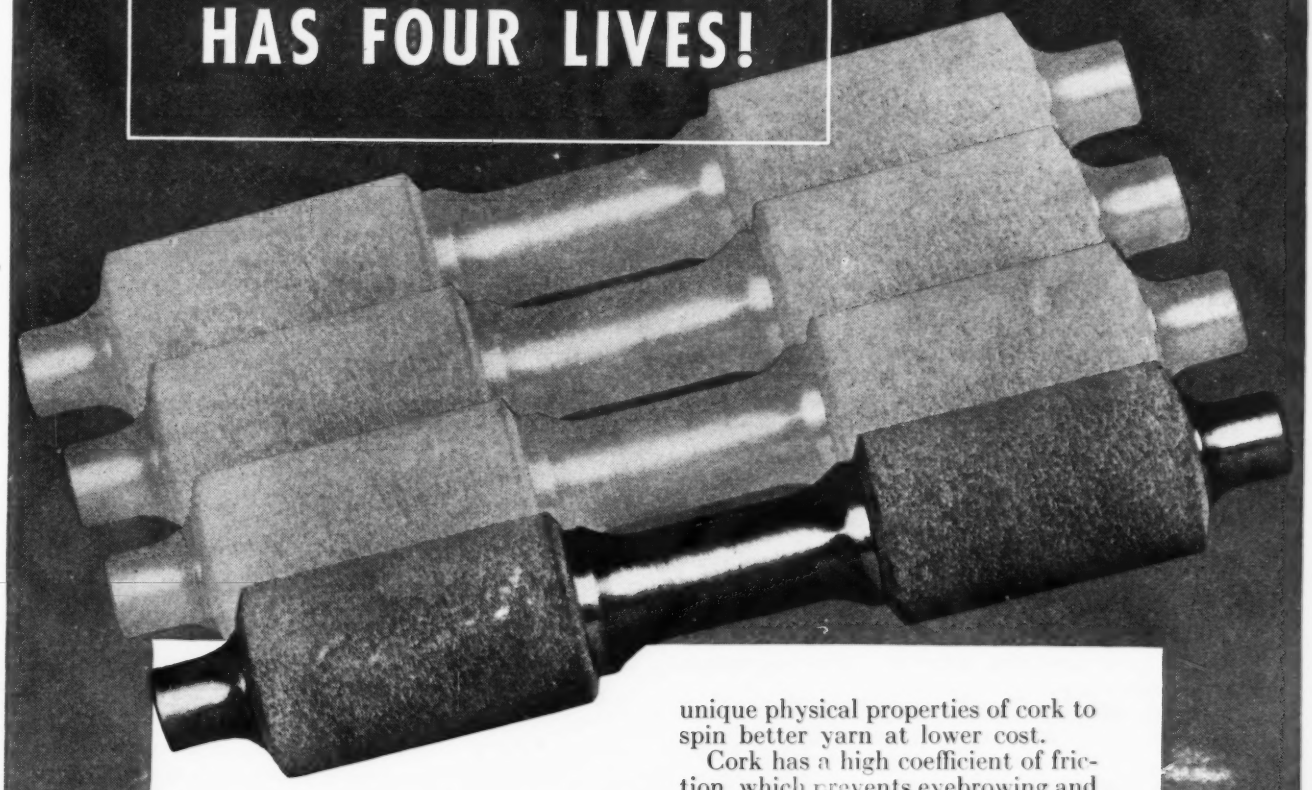
CENSUS REPORT OF COTTON CONSUMED AND STOCKS

	Bales	
Consumption of Lint	**This Season**	**Last Season**
In United States, January 1943	915,479	947,539
In United States, December 1942	935,511	888,379
In United States 6 months	5,627,756	5,390,724
In Cotton Growing States, January	795,653	805,750
In Cotton Growing States, 6 months	4,875,158	4,583,798
In New England States, January	95,957	114,985
In New England States, 6 months	599,286	642,683
In All Other States, January	23,869	26,804
In All Other States, 6 months	153,312	164,243
Mill Stocks		
In United States, January	2,506,639	2,497,795
In United States, December	2,567,188	2,395,386
In Cotton Growing States, January	2,102,458	2,033,448
In New England States, January	329,405	387,294
In All Other States, January	74,776	77,053
Warehouse Stocks		
In United States, January	13,069,879	12,857,476
In United States, December	13,576,030	13,709,883
In Cotton Growing States, January	12,787,849	12,466,814
In New England States, January	265,226	369,936
In All Other States, January	16,309	20,726
Active Cotton Spindles		
In United States, January	22,889,954	23,087,308
In United States, December	22,887,072	23,062,264
In Cotton Growing States, January	17,417,950	17,459,986
In New England States, January	4,876,738	4,977,356
In All Other States, January	595,266	649,966

Book on Wartime Conservation

"Wartime Conservation" is a new 96-page book published by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. It gives recommendations for selecting, applying and using electrical equipment so as to achieve the best possible output with the greatest saving in critical materials. It covers up-rating of motors, thermal temperature loading of transformers, industrial network systems, line equipment and materials; and gives tips on saving and salvaging materials as practiced in the various Westinghouse plants. It also gives many examples of how existing equipment can be made to give better service and greater output by uprating and rebuilding with more efficient materials than originally used.

THIS CORK COT HAS FOUR LIVES!



IF you're using Armstrong's Cork Cots, you already know this cork cot that averages four times as much service as leather roll coverings. That's because Armstrong's Cork Cots have a long initial life and, when they do begin to show signs of wear, can be rebuffed . . . made like new . . . for as little as ½¢ per roll. Moreover, each cot can be rebuffed two to four times . . . for a total of three to five full-length service lives!

These cots not only give you *long* service. They give you *dependable* service, for they fully utilize the unique physical properties of cork to spin better yarn at lower cost.

Cork has a high coefficient of friction, which prevents eyebrowing and produces uniform drafting with minimum slippage. Cork's resilience helps it "come back" after being grooved by top roll laps or hard ends. Cork's resistance to lateral flow helps maintain a true drafting surface and assures satisfactory Monday morning start-up.

Combine all these advantages with low first cost, and you realize why *more spindles are equipped with Armstrong's Cork Cots than are equipped with any other roll covering.*

Armstrong Cork Company,
Textile Products Section,
3603 Arch St., Lancaster, Pa.

ARMSTRONG'S CORK COTS

ACCOTEX COTS · ACCOTEX APRONS

NEW EQUIPMENT and MATERIALS

New Linestarter

Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa., has announced a new Size 2 Class 11-200 linestarter for machine tools, textile machinery, etc., requiring less than half the mounting space of former units without sacrifice of wiring space. This compact linestarter is designed for group mountings, built-in applications or remote mountings. It has a new clapper-type armature with knife-edge bearings, and utilizes double-break silver-to-silver contacts, thus eliminating shunts and reducing maintenance. Overload relays are re-set either by hand or automatically. All parts are accessible from the front and all control circuit terminals and interlock terminals are clearly marked for easy installation and repair.

◆

Draper Develops Laminated Shuttle

Draper Corporation, Hopedale, Mass., have announced the successful development of a laminated dogwood shuttle, to meet the acute shortage of supply of dogwood shuttle blocks of the right sizes. The company explains that, finding as yet no suitable substitute material in the field of plastics, and no supply of other wood as satisfactory as dogwood, research developed the satisfactory use, by lamination, of the small pieces of the dogwood log left over in sawing out regular shuttle blocks. It is explained that much perfectly good wood is left, but in sizes too small for whole shuttle blocks; that these small pieces have been of limited value for the smaller shuttles used abroad, but have never been usable by domestic shuttle-makers.

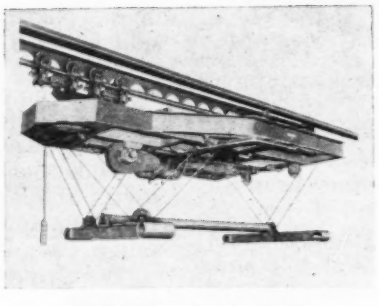
These smaller pieces of dogwood are united by a permanent joint which it is stated is stronger than the wood itself; this permanent joint, achieved by means of a special adhesive under powerful pressure, does for wood what welding does in binding two pieces of steel. The strength and permanence of the joints have been tested by ASTM shearing tests which prove in every case that the joints are stronger than the wood; the results being the same in tests made on blocks that had been soaked for 48 hours.

The company points out that the laminated shuttle is a war substitute, and the right to produce it has been made available to all as a means of aiding in the war effort.

◆

Stabilized Tramrail

The Cleveland Tramrail Division, The Cleveland Crane & Engineering Co., Wickliffe, Ohio, have announced a new stabilized Tramrail carrier, designed to solve the problem of suspending a load rigidly with the use of the usual flexible hoisting ropes. By a simple patented arrangement of the ropes to form a triangular suspension, a load can be held rigidly in place so as to eliminate longitudinal, lateral and rotational sway. The rope angles have a definite relation to one another and have been worked out according to a mathematical formula. A load can be raised or lowered through a considerable distance and yet with nothing more than the hoisting ropes supporting it, will remain as rigid as if guided in an elevator shaft. Further, even if the load should be considerably unbalanced, the carrier will hold it in place, it is pointed out. For instance, if the carrier were used to convey airplanes and several men were to sit on the extremity of one of the wings, the carrier would support the load solidly.



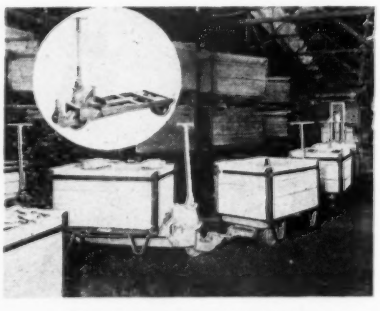
Stabilized tramrail carrier

The stabilized carrier may be operated on two standard Cleveland Tramrails or on a double girder Tramrail crane bridge. It also may be operated on the regular type overhead Cleveland Tramrail rail on each side of which are provided parallel flat rails or I-beams for the support of stabilizing rollers attached to the carrier, which keeps the carrier level at all times.

◆

New Trailer Type Hand Lift Truck

The Yale & Towne Mfg. Company, Philadelphia, Pa., have developed a new trailer type hand lift truck, to be used as the load-carrying unit for trailer train operators, or as a conventional type hand lift truck. It is pointed out that it fits in with present equipment and utilizes present skid platforms and pallets, since it is adaptable to the handling of all types of loads on skids,



New trailer-type lift truck

bins, dump body skids, as well as all special type skids. It is equipped with self-coupler attachments which simplify the method of connecting or disconnecting train formations. The operator merely pushes trucks together. The front end coupler loop slides through the jaw ends of the other truck coupler, pushing up a latch which automatically drops into locked position, and the train is formed. To break the train, the operator merely steps on the pedal pad of the latch casting, and the trailers are disconnected.

◆

New Rayon Yarn Named "Tyron"

Industrial Rayon Corp., Cleveland, Ohio, has announced that its high tenacity rayon yarn for tires, produced by its exclusive continuous process machines, will be labeled Tyron. As previously announced, the company's parent plant is now being converted for the production of this yarn to be used in the manufacture of tires for aircraft, motorized artillery and army transport vehicles. This conversion will increase by more than 50 per cent the company's output of continuous process yarn which is already widely used by the armed services.

Laminated dogwood shuttle. Center section retouched to show laminations. Joints hard to detect in real shuttle

NEW THINGS *via* MODERN CHEMISTRY

are helping mightily to win VICTORY. . . SOONER!

PHIL-PRO-TEX is the new finish that makes canvas last longer . . . because it makes canvas not only water-proof and rot-resistant, but FLAME-Resistant as well.

When Victory is Won, this war-time experience will make available awnings and canopies of flame-retardant canvas . . . lasting hatch and life-boat coverings . . . long life and really protective tarpaulins and merchandising coverings.

PHIL-PRO-TEX finished canvas does not have a tendency to stiffen and crack in cold temperatures . . . nor to become gummy and sticky at high temperatures.

An informative booklet will be sent to those interested.

TRULY ANOTHER TRIUMPH FOR CHEMISTRY

★ ★ ★ ★ ★ ★ ★

★ *On March Ninth,*

Nineteen Forty-Three ★

★ **THE MEN AND WOMEN OF THE PHILADELPHIA TEXTILE FINISHERS, INC. (the makers of PHIL-PRO-TEX) will receive the coveted Army-Navy "E" Award for outstanding achievement in the production of War Equipment. ★ This honor and recognition obviously belongs to each and every employee, executive . . . and to the cooperative suppliers of essential materials. ★ To this team credit is due.** ★

★ ★ ★ ★ ★ ★ ★

PHILADELPHIA TEXTILE FINISHERS, Inc.

3701 NORTH BROAD STREET

PHILADELPHIA

William L. Barrell Co., Selling Agent, 40 Worth Street, New York, N. Y.

New Product to Replace Glycerin

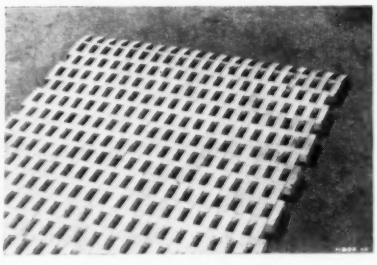
The Aktivin Corporation, 50 Union Square, New York City, have announced the development of Corpolin, which, as a substitute for glycerin, exceeds that product in hygroscopicity. Corpolin is a heavy, odorless, and colorless liquid that is non-volatile and non-inflammable, and does not discolor in storage, it is pointed out. The manufacturers further point out that it is miscible with water, alcohol, methanol, glycerin, and formaldehyde, and exerts a swelling effect on gums, and prevents glue or gelatine solutions from gelatinizing. The pH of the product is 7.0 to 7.2, and it loses its hygroscopicity in the acid range. On heating, it begins to decompose at 140 degrees C; on cooling to the zero point or lower, it becomes a viscous gel—a 10 per cent solution, by weight, freezes at —4.6 degrees C (24 degrees F), a 25 per cent solution at —11.5 degrees C (9 degrees F).

The specific gravity of Corpolin is 1.535; of glycerin, 1.260.

The manufacturers have made tests indicating that the product exceeds glycerin in moisture retention and capillarity as well as in moisture attraction.

Flexible Wood Link Matting

American Mat Corp., 1798 Adams St., Toledo, Ohio, have developed a flexible wood link matting, substantially constructed of wood links, light in



Flexible floor matting

weight, which can be rolled or folded up for easy handling and cleaning. Lying flat, it follows the contour of the floor. The ends are beveled to reduce the danger of tripping.

◆

Printing Thickener

Stein, Hall & Co., 285 Madison Ave., New York, has developed Sho-Pal, a dry product which acts both as a thickener and binder for printing, for use in pigment printing. In lesser concentrations it forms a satisfactory padding liquor for pigment dyeing. As it is used with water, it eliminates the fire hazard and toxicity of solvents, and avoids the danger of damaging rubber blankets, it is pointed out. Water dispersable pigments of any type may be used with it, and any other types of color can be used in the same patterns as the paste is made up with water. No homogenizing equipment is necessary and no strategic materials are involved. Curing is eliminated, and thorough drying is the only requirement to obtain fastness to washing and dry cleaning.

◆

Synthetic Rubber Mountings

The B. F. Goodrich Co., Akron, Ohio, has announced that its line of Vibro-Insulators (rubber mountings) can now be made using its Ameripol synthetic rubber. Mountings made of Ameripol synthetic rubber are expected to find use in many fields where the action of oils, grease, paint, fatty acids or heat result in too-rapid deterioration of natural rubber used on mountings. They are designed to carry the load in shear, because rubber in shear is known to have six times the resiliency of rubber in compression.

◆

New Rotary Pump with Removable Liner

Blackmer Pump Co., Grand Rapids, Mich., has announced a new rotary pump with an improved removable liner. It operates on the same "bucket design" (swinging vane) principle as all standard Blackmer pumps, but is so constructed that, when wear finally affects the capacity of the pump, the old liner may be easily removed, and a new one set in place. The replacement operation involves only the removal of the pump heads, driving out the old liner and inserting a new one. Neither piping nor drive is disturbed, and due to the self-adjusting buckets, no fitting is necessary. Pumps with the improved removable liners are available in capacities from 20 to 750 g.p.m. and pressures up to 300 p.s.i.

◆

"Captive Latch" for Fluorescent Fixtures

Sylvania Electric Products, Inc., Salem, Mass., have developed the "Captive Latch", a spring-type fastening for its new line of composition reflector fluorescent fixtures, which holds the reflector securely to the top housing and simplifies installing and cleaning. It requires only a quarter turn to remove the reflector, with no tools needed, and since the latch is an integral part of the top housing, it cannot become loose or drop out.

A Review of the Cotton Waste Market

Boston, February 17, 1943

COTTON WASTE opened February on the top level of the year and as the month closed it seemed hardly open to doubt that these materials exhibited definite improvement from the standpoint of the prices which consumers were willing to pay. There is no abundance of unsold waste in this vicinity and in some stocks, such as fly, the demand at times has run ahead of the supply.

An upward price trend continues in waste for which there is a sizable consumer demand. This covers strips, bedding stocks and threads for wiping wastes. At the time of writing peeler strip is strong at 11.50 cents for choice material while upland strips move on a range of 9.00 to 10.50 cents. Dealers are not overcrowded with orders but are managing to do a nice little business in some stocks which enables them to regard with some measure of composure their other supplies which are somewhat frozen by consumer apathy. The market is not busy but is far from lacking consumer attention.

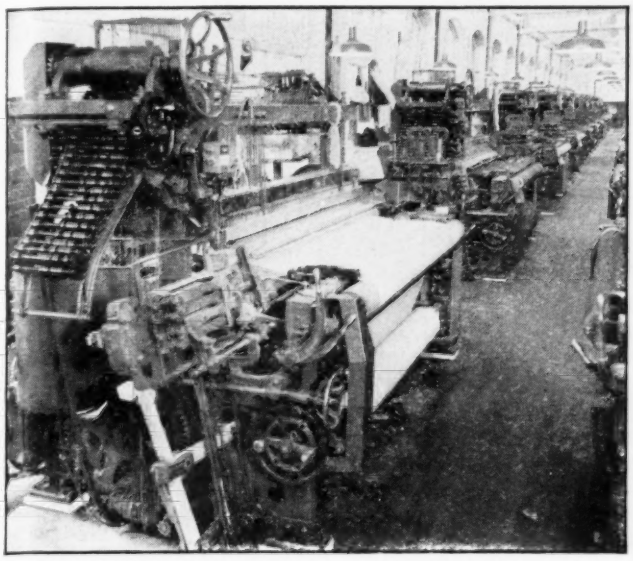
Supplies of wastes held by dealers in the New England area are not overburdensome and in this respect are in contrast to the cotton-growing States where there is difficulty, it is said, in providing storage capacity. Users of waste are not buying in any speculative way and in meeting their immediate needs seem under the impression that a huge reservoir of waste is available which will serve to keep consumer prices under control. Meanwhile Government orders for wiping wastes have firmed raw thread prices though New England users are cautious buyers at this present period. Comber stocks of all kinds are accumulating. Consuming demand is much below normal.

There are really no soft spots though quotations on peeler spinner are nominal and some reduction might be made in order to move stock. Peeler strips and upland strips are good sellers. Local wiping waste manufacturers are said to be failing to secure a normal profit in their operations owing to what they consider high prices on the raw threads. Bedding manufacturers are fairly well covered on their requirements and this recent element of strength is now less effective. Most dealers here are asking 10.50 cents for peeler comber, delivered in most cases.

Bedding stocks have been the mainstay of the market up to quite recently, but for a steady seller most dealers would select peeler strips with good uplands in the second place. Woolen mills which usually take out some sizable quantity of soiled cards, spinners and combers, have been practically out of the market for year to date. The blending program in the manufacture of woolens is progressing, though apparently has not reacted in the direction of an incorporation of cotton wastes in conjunction with wool wastes.

Wastes are now in a firmly priced market for all the stocks in demand but in cases of an oversupply for local needs, most dealers are just as willing to meet the market as they are to sell on a rising market. On the whole, however, wastes are lacking in momentum. Consumers buy only for nearby needs and until they change this policy, or some impetus from an unexpected source presents itself, the buying and selling of wastes in the New England area will continue below normal volume.

After 37 years—
STILL A GOOD FLOOR



Laid in 1905 in a Lowell, Mass., weave room, this Maple floor shows scant signs of wear. Looms mounted on Felters Unisorb, without bolts or lag-screws.

It's NORTHERN HARD Maple *Of Course*

In hundreds of textile mills, floors of Northern Hard Maple are rolling up records—for long life, sturdy resistance to wear, low cost of upkeep. The Lowell, Mass., floor pictured above, demonstrates again the long life of Hard Maple in textile mills.

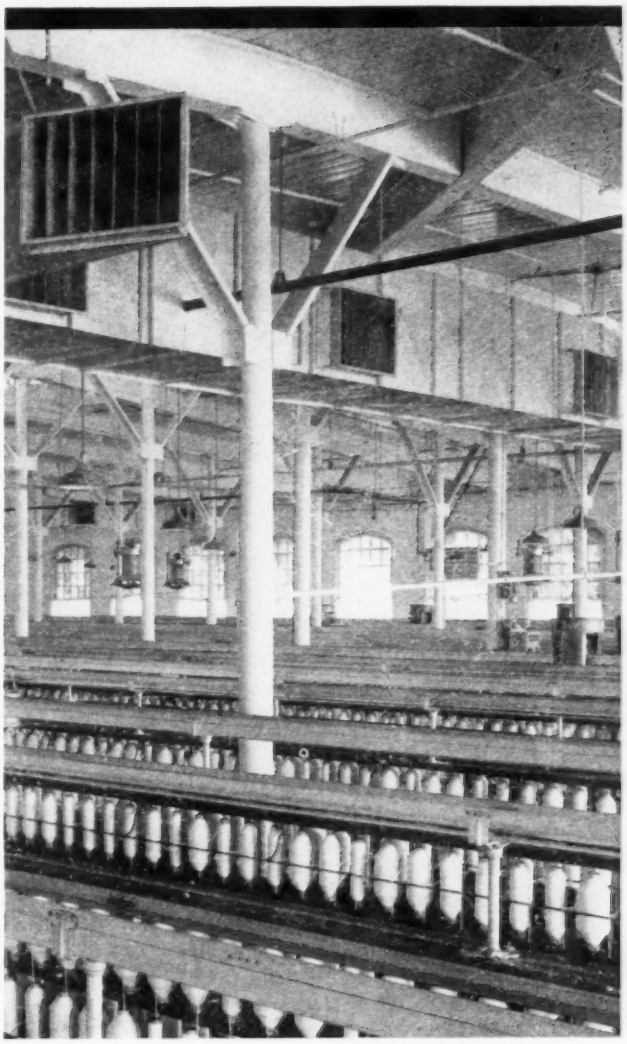
A Maple floor is modern! Warm, dry—it increases worker-efficiency. Its tough, non-dusting surface protects machinery. Mill traffic moves easily over its hard smoothness!

Correctly finished, brushing alone cleans a Hard Maple floor. This smooth, tight-grained wood is non-lint-catching. Better working light is reflected by its bright, clean surface. Consider carefully these many advantages of Northern Hard Maple whenever you're planning new floors or reflooring. Specify MFMA (trade-marked, guaranteed) Northern Hard Maple. *Ask your architect!*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

Write for folder on heavy-duty finishes for old or new Maple floors, which further reduce cleaning costs. See Sweet's, Sec. 11/57.

Floor *with* MFMA Maple
REG. U. S. PAT. OFF.
(NORTHERN HARD)



In Modern Production

Parks Certified Climate
REG. U. S. PAT. OFF.

is not a textile accessory.

It is an integral part of modern high speed textile operations. It has been known to pay for itself in less than a year.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

ROBERT A. MORGAN is general manager of the Arkansas Ordnance Plant, Little Rock, Ark., which in February received the Army-Navy "E" award for war production. Mr. Morgan is widely known in the textile industry. He is a graduate in textiles of the Georgia School of Technology, and was manager of the Southern Brighton Mills, Shannon, Ga., for several years beginning with its start of operations, was later industrial manager of Tubize - Chatillon Corp., at Rome, Ga., and later formed the engineering firm of Moore, Thies and Morgan, Charlotte, N. C., textile consulting engineers. He is on temporary leave of absence from this firm to devote his time and experience to the management of the Arkansas Ordnance Plant, which he joined in December 1941. In 1940 Mr. Morgan organized the Morgan Mills, Rome, Ga., and with his son, GRAY MORGAN, started the manufacture of elastic yarns, which was halted for the duration by the national rubber conservation program.

Mr. Morgan

H. H. WILLIS, for the past 15 years dean of the textile school at Clemson A. & M. College, Clemson, S. C., has resigned that position. A graduate of Clemson, Mr. Willis had previously been connected with research work in the U. S. Department of Agriculture at Clemson. He served the federal government as chairman of the Cotton Textile Industrial Relations Board for South Carolina under NRA. During the past two years he has served as arbiter and advisor on technical and human relations problems in the textile industry. He plans now to devote part of his time to a textile training program in South Carolina offering guidance and assistance to young men in the industry, and to co-operative work in labor relations and technical work in textile plants.

R. K. EATON, professor of carding and spinning at Clemson College, S. C., for the past 20 years, has been appointed acting dean of the textile school following the resignation of H. H. Willis from that position.

HUGHSTON M. MCBAIN has been elected president of Marshall Field & Co., Chicago, Ill. For the past 2½ years he has been first vice-president. Now 40 years of age, Mr. McBain has been with the company for 20 years, starting as a bill adjuster. He has been general manager of all three of the principal divisions of the company, including the manufacturing division which operates the company's textile mills.

CLIFFORD B. HAYES, vice-president in charge of cotton manufacturing, of Pacific Mills, with headquarters at Lyman, S. C., and E. DEAN WALEN, vice-president in charge of the worsted division, with headquarters in Lawrence, Mass., have been elected to fill recent vacancies on the company's board of directors.

LAWRENCE N. HALE, for the past several years with Drayton Mills, Spartanburg, S. C., has been made manufacturing agent of the Paul Whitin Mfg. Co., Northbridge, Mass., succeeding A. J. OWLER, who has joined the Verney Brunswick Mills, Brunswick, Maine.

CHESTER F. CONNER, manager of distributor sales, industrial products division, The B. F. Goodrich Co., has been appointed to the staff of advisors on mechanical rubber goods in the office of rubber director, War Production Board, Washington, D. C.

GEORGE H. ADAMS has been made executive vice-president of The Bunting Brass & Bronze Co., Toledo, Ohio. He will have supervision over all manufacturing, sales and research operations. He joined the company as sales director in 1928.

CORP. FRED KRACKE, son-in-law of C. A. PETERMAN, Atlanta representative of Iselin-Jefferson Co., has started his training course at the Officers' Training School at Fort Benning, Ga. He was formerly stationed at Camp Meade, Md.

JAMES C. EDWARDS, JR., has resigned as master mechanic of the Chicopee Mfg. Corp. of Georgia, Gainesville, Ga., to become mechanical superintendent of the Exposition Cotton Mills Co., Atlanta, Ga.

PAUL MEELFELD has been made manager of advertising and sales promotion of The Hinde & Dauch Paper Co., Sandusky, Ohio. He has been with the company since 1914 and advertising manager for the past six years.

C. V. HUDGENS has been promoted from second hand, first shift spinning, Oakland plant of The Kendall Company, Newberry, S. C., to overseer of spinning at the company's Thrift plant, Paw Creek, N. C.

WALTER DILLARD, vice-president and general manager of the New Braunfels (Texas) Textile Mills, has been elected president of the Texas State Manufacturers Association. He is also secretary of the Texas Prison Board.

EDWARD C. RUSSELL completed in February 25 years of service with the New York sales office of the American Viscose Corporation. He is now in charge of production and shipments in the company's "Fibro" sales division.

HARRY A. SHEALY has been promoted from night superintendent, Olympia plant, Pacific Mills, Columbia, S. C., to superintendent of the company's Richland plant at Columbia.

MILTON BRINDLEY has been made general manager of the Grosvenor Dale Mill of Cluett, Peabody & Co., at North Grosvenordale, Conn., succeeding JOHN A. SKEDGELL, retired.

HENRY J. DUPONT, formerly of Androscoggin Mills, Lewiston, Maine, has become overseer of XD weaving at Verney Mills, Peterborough, N. H.

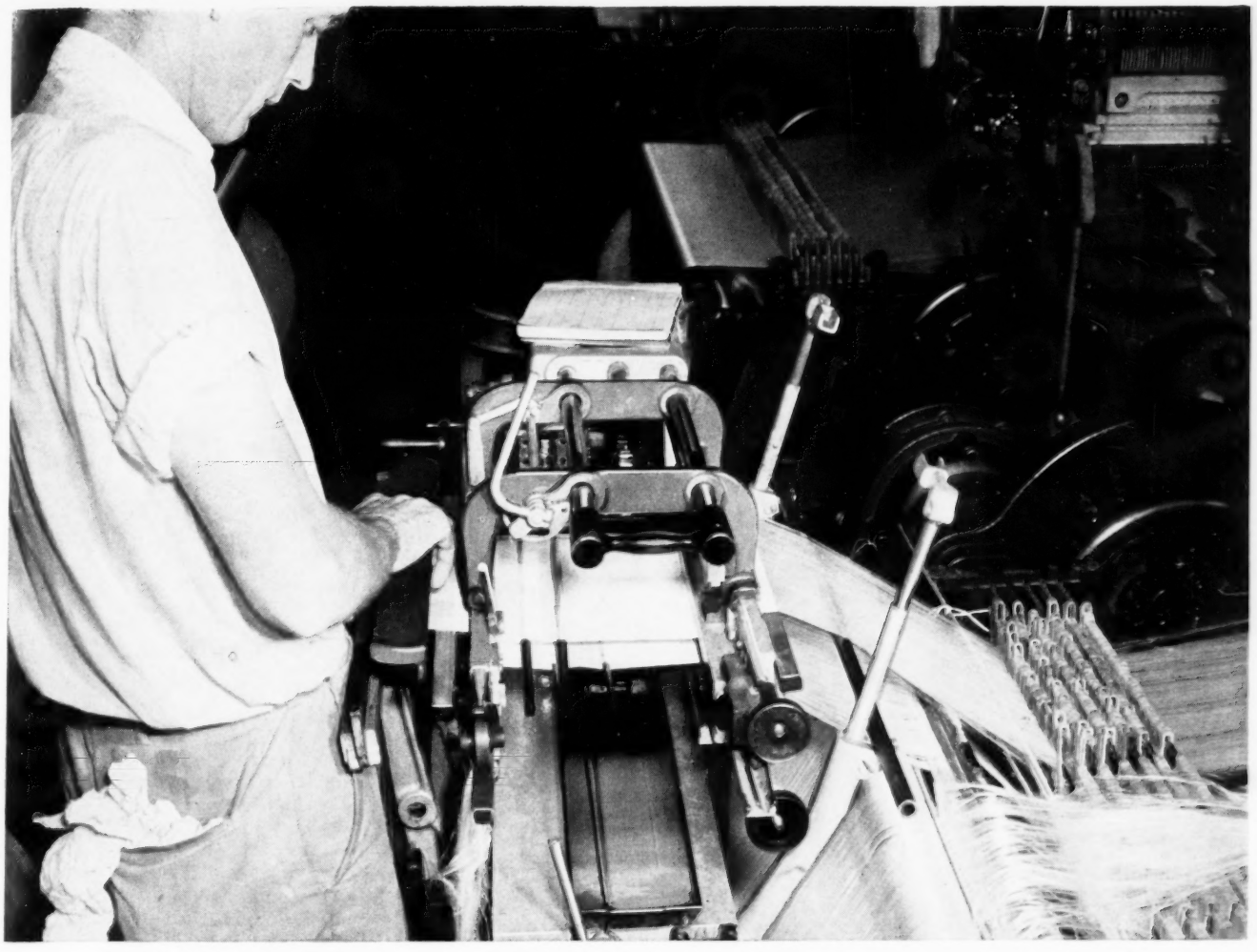
M. H. WOLFE, formerly with the Martha Mills, Thomaston, Ga., is now overseer of carding at the Springs Cotton Mills, Lancaster, S. C.

Obituary

MARION T. GRIMES passed away in his sleep at his home in LaGrange, Ga., on Saturday, February 6. Mr. Grimes had held a number of important operating positions in the textile industry. He was a brother of OSCAR D. GRIMES, of the Athens Mfg. Co., Athens, Ga.

HILL M. HUNTER, 61, secretary and general manager of Proximity Mfg. Company, Greensboro, N. C., until ill health forced him to retire in 1941, passed away on February 17 at his home in Greensboro.

LAWRENCE (LARRY) FOYLE, for many years a representative of Proctor & Schwartz, Inc., Philadelphia, Pa., died in late January following a long illness. He was 50 years of age.



Tie-In New Warp AT THE LOOM

WHEN the warp beam on a loom runs out, it must be replenished with a full beam, and the ends connected together uniformly and accurately. The most practical and economical way to do this is with a Barber-Colman Portable Warp Tying Machine, which is shown in action in the picture above. This machine is light in weight, can be easily wheeled from loom to loom, and is compactly designed to work directly in back of the loom in space as narrow as a 12″ alley. The actual tying is manually accomplished by simply turning a crank. Accurate mechanical controls produce a straight line of uniform knots and eliminate any possibility of dropped ends. These machines, in several models for different kinds of yarn, are in steady use in mills all over the world, producing top quality work and reducing warp replenishment time to a minimum.

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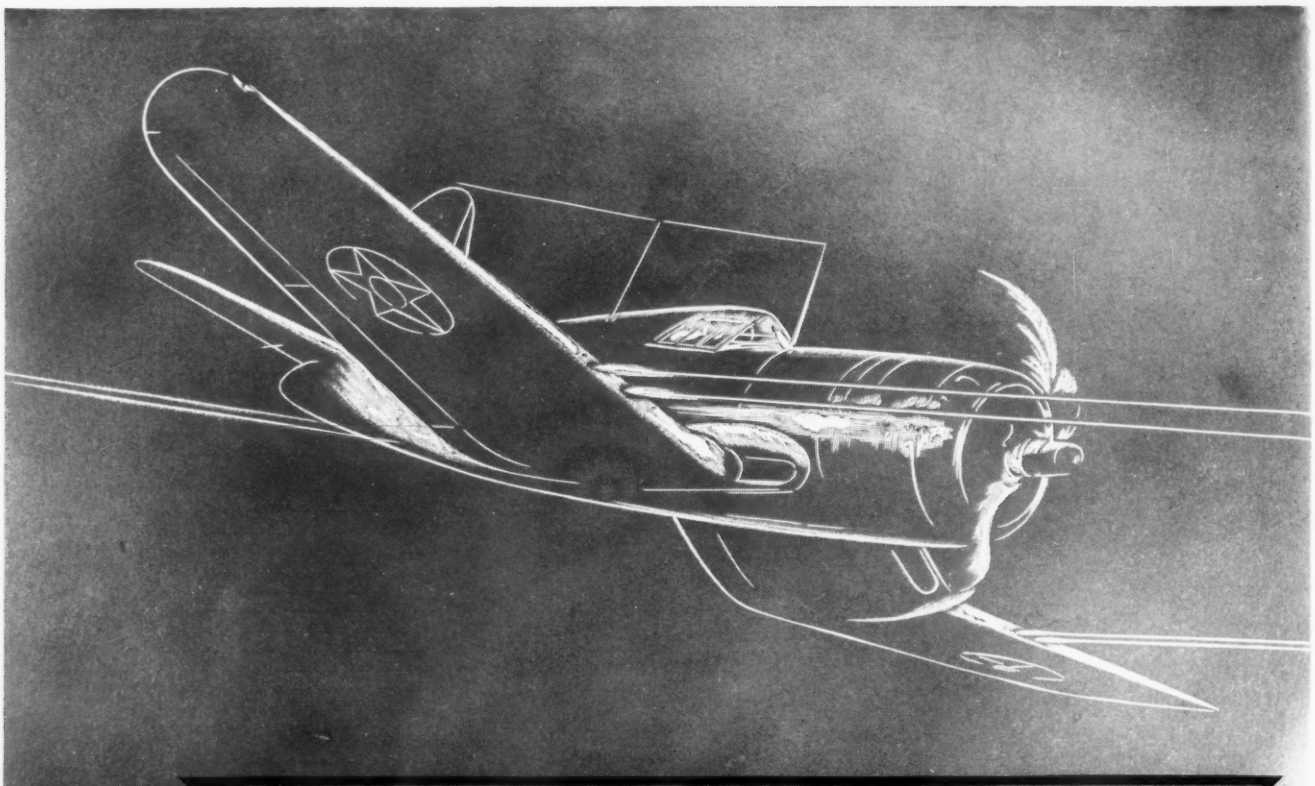

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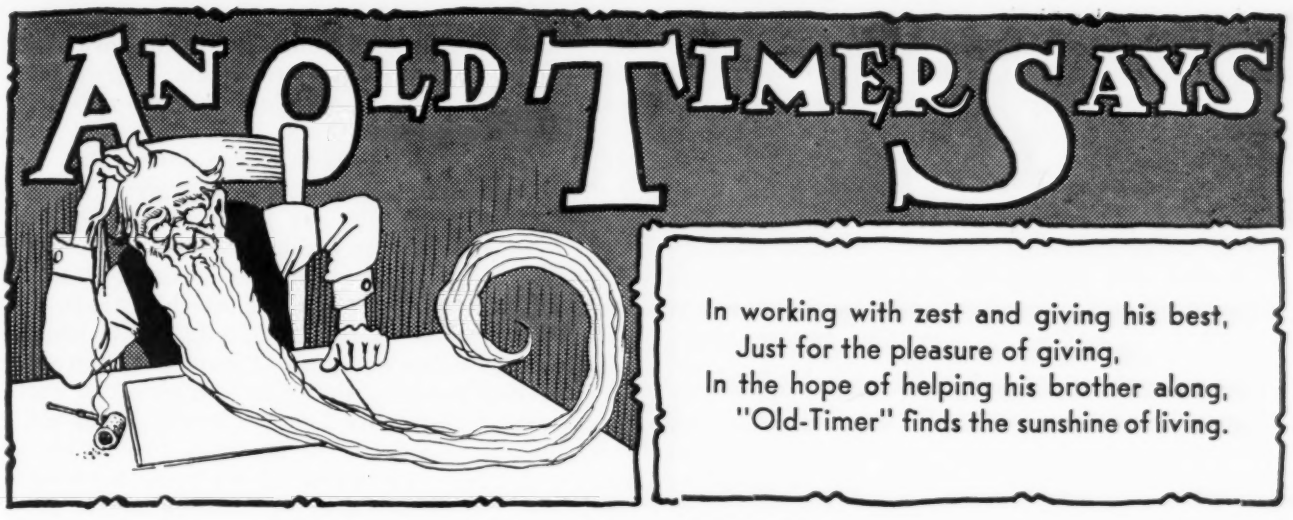

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

A "Review Lesson" on Personality, Etc.

Some of you readers may have had the idea that it was a reflection on your education, or a criticism, when we wrote that article in the December issue of COTTON, suggesting that you did not possess the vocabulary to converse intelligently with mill executives—that you did not possess the vocabulary to convey to others the knowledge which you have acquired over long years of practical experience.

If any of you did harbor such thoughts, let me put you at ease by telling you many highly educated men—yes, many noted writers, historians and even critics—readily admit that they do not have sufficient vocabularies to express themselves adequately.

I have just read a most interesting book by Henry C. Link, Ph.D., a man who has taught psychology to thousands of people and who has written several books. Listen to what he says: "This growing tendency was forced upon me by the realization that my professional and scientific vocabulary was not always adequate. It was neither sufficiently clear nor sufficiently definite for the needs of many who came to me for advice."

Gentlemen, Mr. Link, Doctor of Philosophy, realized he could not talk the language of many people he was trying to advise. If you wish to be able to talk the language of any man you come in contact with, be he mill executive or laborer or scientist, keep up the system we have shown you, and you will marvel at the progress you will make in expanding your vocabulary.

Dr. Link gives out some very practical thoughts as a result of his contacts with people. One of them is that it is much better to make several mistakes than to make only one. The man who makes one mistake and hesitates to make another is left behind by the man who has made several mistakes but is profiting by each one and therefore making progress.

You know, gentlemen, there is nothing new about this psychology business—the art of working people—personality and all of the other things which go to make the successful mill man today. Jesus Christ was our greatest teacher. To Peter and Andrew, casting their nets into the sea, he said: "Follow me and I will make you fishers of men." He sent his disciples and the 70 out into the world to carry his message. *Before* sending them, he gave them a course of training in how to approach men. He preached meekness in spirit but boldness in action. Now, wouldn't you call that sound reasoning for any man who is confronted with the problems that meet us in the textile business?

We must be considerate of the other fellow's point of view, regardless of our own. That is broadmindedness—that is unselfishness—that even gives you a feeling of superiority over the other fellow when you realize you can control those emotions better than he can. People who have acquired the art, or I may say the habit of becoming courteous, which incidentally makes friends, no longer have to put forth any effort to do so. The habit has been formed and they take a great deal of pleasure in making friends even out of enemies.

Let me borrow a statement from Dr. Link to emphasize the thought I am trying to give you. He says, "Personality is the extent to which the individual has learned to convert his energies into habits or actions which successfully influence other people."

Influence your operatives, gentlemen, to work harder for production for you than for that other foreman—influence your section men to repair and thereby save a shuttle for you when they would throw it in the trash can for the other foreman. That is personality which gets results, gentlemen—that is personality which will put dollars in your pocket because it will get you more production with less cost of supplies than the other fellow gets with the same operatives at the same machinery.

And don't forget that you must have a vocabulary which will enable your personality to come out. Words are the vehicle of thought—a sufficient command of words enables you to talk more convincingly—to explain your thoughts more clearly both to your operatives and to your employers.

A man may be what we term "good looking" but unless he has personality, that other fellow who may be termed "ugly as the devil" will run rings around him in getting production and having one grievance from his operatives where the good looking chap has ten.

It is not a requisite of personality to be good looking or to dress expensively, but any man who has the honor to be entrusted with working people—of leading and influencing people—should respect that honor enough to be neat and clean in his habits and dress. Neatness and cleanliness are two cardinal virtues not only for personality but for any man who expects to have the respect and confidence of the people who work for him. A slouchy, dirty man simply cannot expect people to have much respect for him, especially when it certainly is not expensive for a man to be clean. The neatness and cleanliness of a foreman has a great influence upon the people who work for him, and that influence is reflected in their work. Form the habit of cleanliness because it is one of the essentials to personality.

I am fully aware of how true it is that you can take the horse to water but you cannot make him drink, and I cannot make you start a systematic study to improve your vocabulary—to improve your personality—to improve your system of personal work; but, by heck, I am going to show you it is so simple and requires such little effort that you will be ashamed of yourself if you don't.

There are 168 (7×24) hours in a week. Allowing 60 hours (6×10) for your work; 56 hours (7×8, or 8 hours per night which you don't get) for sleep; 11 hours for meals (21 meals at 30 minutes each, when you often do not take half that), we have a total of 127 hours. $168 - 127 = 41$ hours. What are you doing with that 41 hours? If you will give me two hours of that time—think of it, only 5 per cent of your spare time per week—if you will lock yourself in a room for one hour two nights a week and follow the course of study we have laid down for you in the articles on vocabulary, personality, and imagination—in two years' time you will have a vocabulary equal to that of a college graduate—you will have a personality that will surprise your wife—your employees—your employer, and yourself. Yes, you will probably be more surprised than any of them.

◆◆

Textile Fiber Consumption Reaches All-Time High

Consumption of cotton, wool and rayon in the United States for 1942, as was to be expected, established a new high peak for all time, aggregating 6,847,000,000 pounds, an increase of 6 per cent above the previous peak consumption level of 1941, states the *Rayon Organon*, published by the Textile Economics Bureau, Inc.

Cotton and rayon consumption were at a rate substantially higher than ever previously reported, but wool consumption, due primarily to restrictions for civilian use, fell short of the previous record year of 1941. Silk consumption in 1942 was of course nominal.

The record consumption of cotton in 1942 is placed at 5,616,600,000 pounds, an increase of 8 per cent above the 1941 consumption. Scoured wool consumption in 1942 is estimated at 610,000,000 pounds, or 7 per cent less than the record level of 652,200,000 pounds in 1941. Consumption of rayon, including staple fiber, registered a gain of 5 per cent over 1941, amounting to 620,600,000 pounds as compared with 591,700,000 pounds in 1941, and was more than double the consumption reported as recently as 1937.

The larger consumption of rayon is due to its replacing silk and nylon and, to a lesser degree, wool and cotton in certain civilian products; its increased use in war products; and lend-lease requirements, Good Neighbor exports, etc. The "new" demand, it is estimated, accounted for 25 per cent of the rayon output, the remainder going into regular channels.

Cotton Week to Be Held May 17 to 22

The nationwide observance of 1943 Cotton Week will be held during the six-day period May 17 to 22, according to The Cotton-Textile Institute and National Cotton Council, co-sponsors of the event.

This year's observance, it was emphasized, will differ markedly from those in previous years. The customary ten-day observance has been shortened to six days in line with the current trend toward streamlining all trade events for the duration of the war.

While the merchandising aspect will not be neglected, it will be concentrated for the most part on those cotton goods remaining in fairly liberal supply and on the many cotton products that have been developed to take the place of the numerous items forced off retail shelves by the war. Retailers are expected to employ the event to drive home to consumers the necessity of conserving those cotton products which are short, such as sheets, underwear, socks, surgical supplies, etc., because of heavy buying for military purposes.

Conservation and the qualities of cotton such as its durability and launderability which contribute so much to the long life of countless household and apparel goods will be emphasized. Many merchandising tie-ins now being arranged will place stress on the hygienic qualities of washable cottons.

In normal times, Cotton Week is celebrated in many cotton growing and manufacturing centers with parades, balls and special educational programs in schools and colleges. A recent survey by the Institute indicates that similar events will be held this year with some modifications in towns and cities located in the dim-out belt. All of these events will be built around the theme of cotton's contribution to the war.

As for supplies of cotton goods, it is pointed out in a recent statement of the War Production Board that the civilian supply of all textiles in 1943 should not fall more than 10 per cent below 1942. The civilian supply last year amounted to 8,876,000,000 yards of which approximately 75 per cent was cotton goods. While this is less than the normal amount, federal regulations governing the manufacture of cotton apparel such as work clothing and shirts alone are expected to conserve a billion yards over the year. Part of the Cotton Week program will be to popularize many of these new wartime styles.

◆

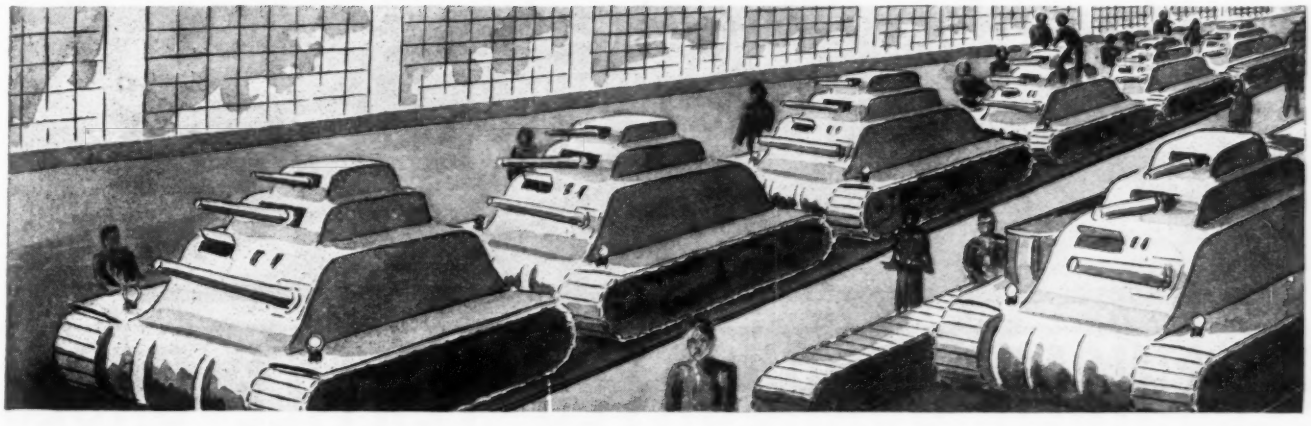
Virginia Maid Opens Direct Mill Sales Office

Virginia Maid Hosiery Mills, Inc., Pulaski, Va., on March 1 opened their own direct mill sales office at 2713 Empire State Building, New York City, according to announcement made by Waldemar Wallner, president. In making the announcement Mr. Wallner stated that the Virginia Maid Mills will hereafter sell, solely and exclusively, full-fashioned and no-seam hosiery of their own manufacture. Concurrently, Ralph Vollmers was appointed manager of sales and William E. Owren assistant manager of sales. Mr. Wallner also announced his withdrawal from Virginia Maid Sales Corporation and his resignation as president of that organization.

Preventing A STAND-STILL WITH A Box

The battle of production must keep pace with the fighting over there. Bits and Pieces must frequently cross the continent to reach busy hands on the assembly line. Nothing can be allowed to block this even flow of war materials for Victory.

With only a few hours to go before delivery deadline, the manufacturer of a vital part found his shipping instructions missing. No packing cases had been ordered.



A frantic call on Old Dominion resulted in the designing and production of needed containers within 24 hours. Air transport did the rest. A Box Prevented a Stand-Still.

All America is at work in support of its fighting men at home and abroad. Old Dominion is proud of its share in this effort--the maintenance of peacetime standards in packaging through the use of non-critical materials. If you have a war time packaging problem, call on Old Dominion.

If YOU Have A PACKAGING PROBLEM Call On

OLD DOMINION BOX COMPANY

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Folding Cartons-Set-Up Boxes-Spiral Wound and Corrugated Containers

PACKAGING THAT SAVES CRITICAL MATERIALS FOR THE NATION

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Quality - Uniformity - Service

CLINTON COMPANY

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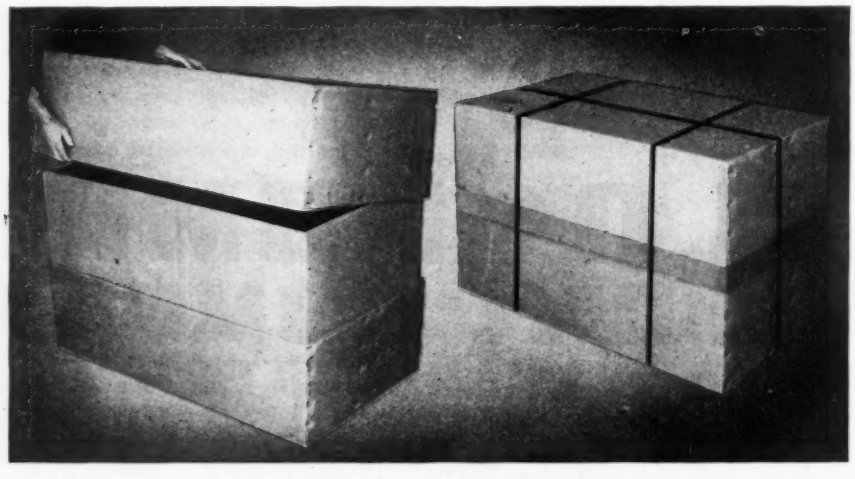

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HOW OTHER MEN MANAGE

Travelers Unthreading

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

♦

SOMETIME ago an overseer of spinning whom we shall designate as "CONTRIBUTOR No. 7392" submitted a request for discussion on "the causes of spinning travelers unthreading when the ends are slacked to doff." The original question as stated was submitted to a number of men, and the first reply, from "CONTRIBUTOR No. 7393", a Georgia spinner, read as follows:

"The writer has had experience of this kind when running fine counts of filling on small diameter rings with large base quills. When the rings are small and the quill base is large, there is very little space left between the ring and the base of the quill. In lifting the quill off the spindle and putting the quill on the spindle, the base of the quill passes so close to the traveler that the slack in the yarn is moved and the travelers when in position will sometimes become unthreaded."

This answer was submitted to the man who asked the question and he came back and said it did not help him much, adding, "My rings are 1⅜-inch diameter and the base of the quill is 1 3/16-inch. This does not seem irregular to me inasmuch as I have run this combination before without undue trouble. My ends here do not unthread when lifting off the quill. The unthreading seems to take place when the ends are slacked mechanically with power. If we slack ends by turning over the cylinder by hand as has been the custom, the threads or ends do not unthread from the traveler."

Meanwhile, a New England spinner to whom the original question went, had sent in the following reply, written before this New Englander, "CONTRIBUTOR No. 7394" we will call him, had been advised of the inquirer's further explanation that the trouble occurred when he slacked the ends by power with the rail at the lowest level. This original reply from "CONTRIBUTOR No. 7394" read as follows:

"In answer to the question as to reasons for travelers unthreading when ends are slacked to doff, I have found in my experience that it is not good practice to spin yarn using round point travelers on rings with a diameter of less than 1½-inch as the traveler slides around the small ring so easily when the ends are slacked. The yarn will kink and slip out from under the rounded point of the traveler.

"In order to help this condition I would recommend a square point traveler. The square point has a little more drag which causes a greater lag in the traveler and the yarn will not kink so fast at one time. These travelers also cling to the ring surface a little more than the round point ones do, which helps to prevent the yarn from slipping out from under.

"Mills running hard-twisted yarns will have this trouble and in a good many cases training the doffers to put the rail down in one motion and not allowing the rail to slip up until the frame comes to a complete stop will help to a great extent.

"If all of the foregoing suggestions do not overcome the trouble I would then adjust a traveler with a smaller circle to the ring."

Now, when we had time to tell "CONTRIBUTOR No. 7394" of the further comments quoted from the inquirer, the New England man wrote again as follows:

"In further reference to the inquiry and the statement of the inquirer that his trouble occurs when he slacks the ends by power when the rail is at the lowest level. I know this can be corrected by changing to a smaller circle traveler and, I might add, if this is impossible, try to bring the rail down, and before taking his foot off the rail or allowing it to come back up after hooking, first slack the ends. The reason for this operation is that you keep the ends tight when the power is shut off and prevent the traveler from unhooking as the bobbins start to turn when slacking ends at the doff."

Getting back now to the first fellow who replied, the Georgia spinner, "CONTRIBUTOR No. 7393", we told him what the inquirer said about his original answer, and he came back and requested further details of the man's conditions which were given as follows:

"His ring is 1⅜-inch diameter. He uses a No. 1 flange ring, 7 traveler, No. 1 flange and No. 1 circle square point with beveled edge. He said the age of his rings is about 5 years, and that his frames are driven by long belt, 2-frame group drive with counter shaft. He is running 30s/1 spun rayon, 3.50 twist multiple, lay gear 50, double worm 4 picks, 8,200 r.p.m. spindle speed."

On the basis of this additional information, "CONTRIBUTOR No. 7393" offered the following further suggestions:

"I feel sure the following is happening to this man.

"First, he is running rayon, and this stock is naturally wiry and hard to pass through the same circle of traveler that would be used on cotton. I recommend that he try a larger circle of traveler.

"Second, he has long belt drive, which gives him a slow start-and-stop of the frame when slacking the ends. I am unable to offer any suggestion as to the slow starting and stopping of the frame, but if he will try using some belt dressing on the belt just before slacking the ends, I feel he will see the point I

am trying to explain.

"Should this fail, try changing the traveler circle to a 1½ C."

That seems to clean up "CONTRIBUTOR No. 7393". Now, to get back to the man in New England, "CONTRIBUTOR NO. 7394", when we sent him the further details of the man's conditions, he came back with the following recommendation:

"I would suggest a No. 6 flange No. 1 circle ⅞ square point traveler. It seems to me that a No. 7 traveler is heavy for a 30s/1 yarn on a 1⅜-inch ring only five years old. He most certainly is not running too fast with 8,200 r.p.m. spindle speed, which I assume would give him 127 r.p.m., front roll speed.

"The lay gear or picks have no bearing on his complaint of travelers unhooking while the frame is slackened at doff. I feel if he will adjust a traveler with the proper weight with ⅞ link, he will have very few travelers unhook at the doff."

That is all the New England spinner has had to say.

Now let us take up the comments of another southern man, in Alabama, whom we shall call "CONTRIBUTOR NO. 7395". This man answered the original question, that is, simply "What causes spinning travelers to unthread when the ends are slacking to doff?" as follows:

"There are a number of things that I have found that will cause this, but to be able to answer what would be the trouble in some special case, it would be necessary to know the size and type of yarn being spun, diameter of the ring, length of traverse, size of flange and number and type of traveler being used, and whether round or square point.

"The first thing I would guess is that he is using a round point traveler and if so I would change to a square point. The round point gives more of this trouble on coarse numbers than on fine numbers. Round point travelers will unthread, especially if the traverse rail back-lashes while kinking.

"Using a traveler with too large a circle will cause this. We have had trouble of this kind when breaking in new rings with round point travelers, and changed to square point and eliminated the trouble. Also, worn rings will cause this trouble.

"Before changing to a square point traveler, I found that the way our doffers were pulling the frames down to doff had more to do with this than anything else. This is the procedure we used to eliminate most of our trouble:

"Have the doffers pull the frame down to about 1-inch of the bottom of the bobbin. Slack the ends without letting the frame come to a full stop. Then pull the frame on down to the bottom of the bobbin. In starting the frame after doffing, don't let the rail come up but about 1-inch before starting, as this will cause the ends to come out from under the travelers.

"Instead of shaking the rail up and down when starting, pull it steadily toward the bottom until the frame starts full. If the doffer lets the traverse jump up while kinking ends, the travelers will unthread. The traverse rail should be pulled steadily downward and locked.'"

After "CONTRIBUTOR NO. 7395" received the additional details of the inquirer's conditions, he made the following further comment:

"After looking over this man's details, I can't say that I have any further comments to make. It seems that he has a pretty nice lay-out and I can't understand why he is having this trouble.

"The only further suggestion I can make is to reduce the circle of the traveler. As the rings might be worn more than he thinks, this will allow him to use a smaller circle.

"If this does not correct the trouble, another thing that might be causing it is the way the doffers are winding the frames down. The doffers could be allowing traverse rail to bounce while the ends are ballooning. But I believe cutting down on the circle of the traveler and seeing that the doffers wind the frames down properly will remedy the trouble."

Our final participant in this discussion is a southern superintendent whom we will call "CONTRIBUTOR No. 7396". He answered the original inquiry as follows:

"According to my experience, travelers unthreading when the ends are slacked off to doff is usually caused by about three or four things: First, travelers too large in circle; second, improper flange; third, round point travelers, especially on coarse counts.

"The inquirer does not mention the counts he is spinning or the flange and size of ring he is using. Let us assume that he is spinning 16s/1 yarn on a 2-inch ring, No. 2 flange and a No. 2 circle narrow style square point traveler. I don't believe this set of conditions would cause any unthreading when slackening the ends to doff.

"Now, if he has a No. 1 flange ring, I would use a ¾ circle. If he is spinning heavy numbers, say 6s to 10s, on a 2⅛-inch or a 2¼-inch ring, then I think he could use a No. 2 flange and No. 2½ or No. 3 circle square point traveler and not have any unthreading. The larger circle makes the traveler easier to put on the ring."

After "CONTRIBUTOR NO. 7396" had gotten the additional details supplied by the inquirer he said:

"I would suggest he try a No. 1 flange ¾ circle and narrow square point traveler, and if this does not do the trick, then I would suggest using a ⅝ circle. The age of the ring is not responsible for his trouble. I believe it is entirely a question of getting the correct circle on his traveler."

We have published the foregoing rather involved discussion, first, for such interest and value as it may have for our readers; second, to invite any other readers to comment on any phase of this problem by giving their experiences; and, third, to illustrate with a sample at random, the difficulties involved in our getting specific information of value when the original question does not incorporate all possible factors and details having a bearing on the problem. On this latter point, we urge all readers, in submitting a question for discussion, to try to include in the first inquiry everything that might have a bearing on the subject.—THE EDITOR.

Flash! We have just had word from the man who submitted this question on travelers unthreading, telling us what he finally discovered to be the cause of this trouble. Watch for his report in the next issue.

A DIFFERENT WAR? YES!

. . . and a different war presents new and difficult problems.

Uncle Sam's fighting men in the jungle, in the Arctic, on the desert - - all over the world - - are demanding fabrics finished to meet the extreme conditions of this *new* kind of war. ● Arkansas' vast peacetime experience is now solving wartime problems . . producing for textile processing and finishing plants products that meet exacting government specifications.

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*REG. U.S. PAT. OFF.

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An "Old-Time" Carder Makes Some Remarks

EDITOR COTTON:

Some time ago I was in a card room where for a number of years I had been employed as boss carder. But since I resigned, the room had been changed to 4-roll draft. The work is taken right from the drawing to the slubbers. A 60-grain sliver is made into 4.00-hank roving, also 4.50-hank with over 20 draft.

What would the old-time carders think of that; those who used to run a draft of 4 or 5?

This 4.00-hank is taken to the spinning room where it is made into 40s and 50s yarn with a draft of around 20. This 4.00-hank is put on bobbins with an 8-inch traverse on slubbers where it used to be a 6-inch traverse on jack speeders. Of course this makes the creel much higher on the frames, and I understand the spinners do not like the work nearly as well as with the 6-inch traverse. The boss spinner told me that it runs well, and the yarn breaks a little stronger. This is combed work, with about 1-3/16-inch cotton. The superintendent told me that he could not make this work unless the cotton was combed. Of course the combers take out the short fibers that make thin places in the yarn, causing weak yarn.

The carder told me that one trouble they have on the slubbers on hot, damp days is that the front top rolls keep lapping up. The superintendent said they had changed over in order to meet competition after the war.

This change-over allowed them to do away with three first intermediate tenders, four second intermediate tenders, and nine jack tenders.

I wonder if "WASH" is still writing for COTTON? I think he is a great carder, but I never could agree with his statement that the cone belt on a speeder drives the bobbin gears alone and unaided. I claim that the fixed or tight gear on the main shaft that meshes with the gears inside of the sun wheel carries most of the load.

The cone belt drives the sun wheel and acts as a regulator of the bobbin gear speed, from the empty bobbin until the bobbins are full. Slowing down the bobbin gears as the roving on the bobbins increased in diameter.

I asked "WASH" some time ago that if the cone belt drives the bobbin gears alone and unaided, why is it that the bobbin gears revolve when the cone is raised and the cone belt is still? He has never answered that one to my satisfaction. Some men will stick to their ideas if it kills every cow in the barn (according to that old saying).

I have been in mills where one could hardly hear the beaters strike the cotton at the feed roll. This is due to a fast, light feed. If the carder changed over to a heavy, slow feed, keeping the same weight of the lap in front of the picker, he would get much more leaf and seed out of the cotton, and therefore a cleaner lap.

Too many carders are afraid they will beat the cotton too many blows at the feed rolls. Does your finisher picker keep up with the cards, Mr. Carder, and gain laps? If not, make your laps a little heavier and draft more at the card, keeping the same weight of sliver in front. This will give the licker-in more time to clean the cotton and there will be more leaf and seed under the licker-in.

I think it is a good idea to have the pickers gain on the cards as there will be laps ahead in case of a fire or a bad breakdown on the pickers. I have had fires in the picker room that nearly stopped the card room for laps.

Now, if the slubbers do not keep up with the drawing, I have made the work on the slubbers 2 or 3 teeth heavier. This gives a chance to take out twist, thereby increasing production, then draft an equal amount on the first intermediate.

Some years ago I had charge of carding in a certain mill and the boss spinner changed some frames onto longer bobbins, that is, on the traverse. Soon I asked him, "How does it run?" He said, "Oh, I don't see much difference." And I told him, "Wait until we get in some of that short cotton that we have some times!"

Now, I am no spinner and no prophet, but for once I was right, and soon we had in some of that short cotton and the work ran so badly that he had to change back to the shorter traverse bobbin. I don't think it pays to go to extremes in this mill work or anywhere else, for that matter.

A carder gets many surprises in the card room due to weather conditions and different stocks. It makes no difference how much experience he has had. These surprises remind me of an old fellow north of here who went out to the stable and found his horse dead in the stall. "Gosh", he said, "I never knew him to do *that* before!" ,

Many years ago when I was grinding cards, the second hand of carding said, "I wish I knew what makes those soft bobbins of roving on the fine speeders". I could not tell him then, but think I could now. It was because the work was so uneven. The carder had in twist for a certain hank roving and these light bobbins of roving did not get the proper amount of twist. If this soft roving got to the spinning it would cause trouble. No spinning will run well with such uneven roving, and, besides, these soft bobbins will be the ones that will break back in the creel owing to lack of twist.

A great many carders, I think, do not watch their drawing close enough. This is a simple process, but bad work can be made here that will be felt all through the mill right to the loom. Sometimes a stop motion on drawing fails to work and does not stop the drawing when an end runs out, and many yards of single drawing run through before the drawing tender puts the end in and then fails to pull out the single drawing. This is drafted out into many yards of light work and many ends in the spinning come down from no other cause.

Mr. Carder, you may say, "They don't do this in *my* mill." Well, just you place yourself where you can watch your drawing tenders and see if they don't.

Drawing is about the lowest paid job in the room and the most inefficient help is usually put on drawing. The stop motions should be watched, whether

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they are electrical or mechanical, and the drawing tenders should be told that if a stop motion fails to stop the drawing that it must be reported at once to the fixer or boss. No spinning will run well with all of this light work from the drawing. These light strands are the ones that will keep breaking down in the spinning and at the loom.

I don't like the way some mills mix their cotton where they have bale breakers. You cannot get as good mixing of the cotton where you open 6 or 8 bales and lay it along the sides of the opener and have the opener man take some from each bale. I claim it is much better to open the cotton, where you have room, in stacks of 50 bales or more. I think the numbers can be kept much more even and besides it is not so good to run the cotton right out of the bale for the beaters on the pickers won't knock out as much dirt as they would if the cotton is aired out.

Some years ago the mill where I was carder was short of help and had to open a few bales of cotton at a time for quite awhile. I soon noticed that my numbers commenced to be uneven and *this* was the cause, so this proved it very well I think. In openings of cotton there is pretty sure to be a bale or two that is too long for the way the rolls are set and if the cotton is opened a few bales at a time the long cotton will be felt more through the carding.

Why is it, Mr. Carder, that you have strings coming through on some speeders while on others there is none on the same work? This I think shows that the cotton is *not* well mixed. If the cotton is opened in stacks of 50 bales or more, if you have room, then have the opener men take the cotton from the top of the pile to the floor, keeping the face of the pile even. Much better results will be obtained, and if you have waste to be put in, it can be mixed in much better than if the opener men threw it in any old way. You can't get in much of it at a time if the waste is mixed in with 50 bales or more.

I think that the superintendent of any mill should be a former carder. He understands cotton and should have something to say about the cotton that is bought to make the numbers he is running. I have seen cotton which was called 1¼-inch which had thousands of fibers that were only 1-inch and some fibers that were but ⅞-inch. This cotton will *not* make good work. The short fibers will make weak places in the yarn. I would much rather have cotton that is but 1⅛-inch if the fibers are uniform in length. The cotton should be sampled and tested for strength of fibers as well as length. A mill will get in a lot of weak fibered cotton and the boss carder will get a blessing out because the strength of the yarn is less than it was. You can close your rolls, put in twist and do many other things but it won't bring back the strength of the yarn. I never thought it paid to try to run too cheap a grade of cotton. I realize fully that due to competition a mill must run as low a grade of cotton as possible, but some mills go to the extreme and get the whole mill in bad. A good running mill can get better help than a mill which is not running so good and, moreover, can hold their help.

I always have found it very important to have a well trained set of help and keep the same ones if possible. You can get more production and better work. Team work counts in the mill as well as everywhere else. Some hands don't seem to care a whit about the next one who must handle their work in the spinning room. They will just let single roving go by which they know will break back in the spinning room. Some of this single roving may run awhile before the ends break down and then this weak yarn will go to the slasher and the loom. Some people just don't seem to see or care where the other fellow gets off. I believe that every carder should aim to keep his work running well. This increases production and reduces cost per pound. The more work he can take off the fine speeders the less cost per pound. The day help must be paid so much anyway. Don't let the intermediate tenders make hard piecings and single roving. This cuts down your production at the fine speeders.

CONTRIBUTOR NO. 7388

Spinning Ring Life

Says increased hours are largely responsible for decreased ring life during recent years.

EDITOR COTTON:

I was interested in the contribution from "CONTRIBUTOR NO. 7399" on page 103 of the January issue of COTTON, dealing with the matter of ring life on spinning frames and the effect of using overhead cleaners and of other recent trends and developments on the life of rings.

The subject of the life of rings on spinning frames is almost as big a question as asking the life of man, because it is so variable.

We have experienced a shorter life of rings in the last few years, but we think we can offer a reasonable explanation. We now have longer traverses, larger packages, larger ring diameters, higher speeds, and, in our particular mill, a little lower grade of cotton. Consequently, we have rougher passage through the traveler. Also, the elimination of processes in the card room causes more irregularity in yarns and calls for slightly heavier travelers. These are all changes that have come about in the manufacturing processes in the last few years.

In addition, the manufacturers have been experimenting with the steel that goes into spindles, and it is certain with their present methods of tempering, the spindles are not as straight as they were several years ago, and, as you know, vibrating spindles cause excessive wear of rings. To this we might add that it is more difficult nowadays to secure bobbins from properly seasoned wood that are well balanced.

Also, we might mention a tendency toward the use of lighter oils. This would constitute a subject for considerable discussion so we will pass it with mere mention.

Then we are asked the question of whether the use of traveling overhead cleaners affects the life of the rings. Ring rails are perhaps a little dirtier when we use overhead cleaners. It is possible that dust and dirt are blown down onto the rails, and there is not

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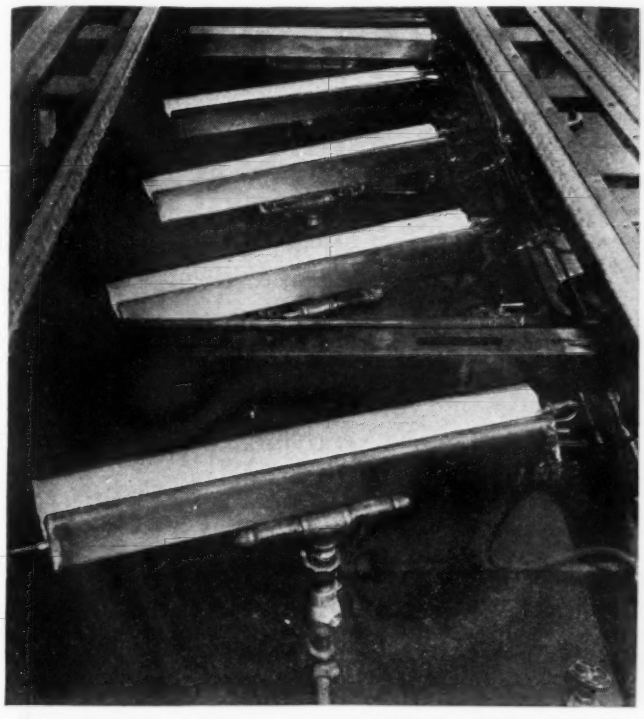

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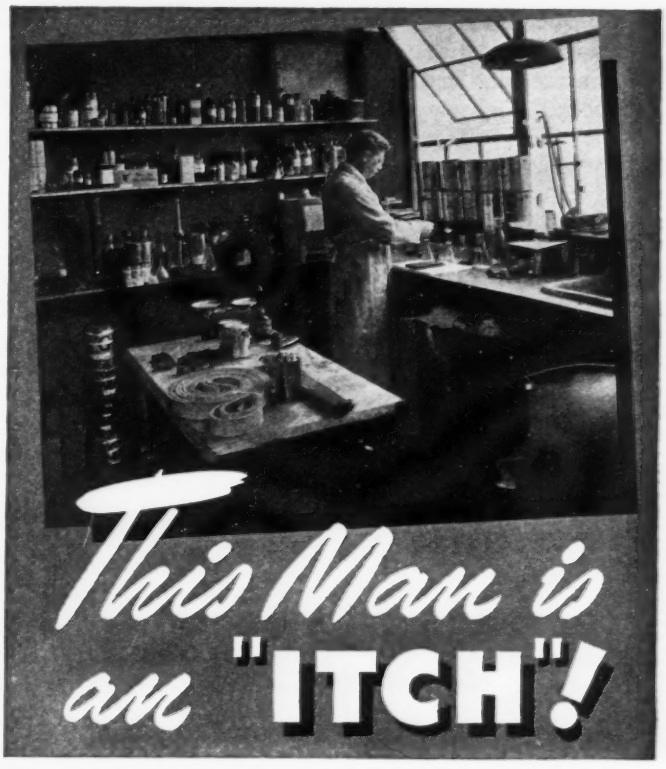

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sufficient draft to make this dust and dirt continue their flow and they lodge on the rails. Naturally there is a creeping action due to various air currents along the rail, and some of the dust and dirt will get against the rings. This might cause an abrasive action, which we do not experience without the overhead cleaners.

It seems that the general practice is to use a little less humidity in the spinning room with the overhead cleaners than without. I shall not attempt to state whether this would cause more wear on the rings or not, although I have been told by those who have had experience with overhead cleaners that there is a greater tendency for the rings to rust where these cleaners are used. It is my personal belief that the overhead cleaner has very little to do with the rate of wear on the rings, and that our use of the frames six and seven days per week on a three-shift basis is responsible for the increased wear, without taking into consideration the mechanical differences I have mentioned.

In the past we have had rings to last 12 to 14 years without being turned (we always buy double-flanged or reversible rings). On certain particular frames we found some rings so badly worn that it was necessary to turn them at the end of six years, but the hours which they had run almost equaled the hours that had been run by the rings that lasted 14 years, and if we should compare speeds and production, we are sure that we have produced many more pounds on the rings that lasted six years.

CONTRIBUTOR No. 7400

Turns per Inch of Twist in Roving

EDITOR COTTON:

What is the best twist (turns per inch) for 4.69 *hank roving? This is made on long draft speeder, draft* 24, *stock* 1 5/32-*inch Delta cotton. The* 4.69 *hank roving is spun single into* 50*s yarn.*

CONTRIBUTOR No. 7314

EDITOR COTTON:

This is hardly enough information to give "the best twist per inch". Size of flyers, spindle speed and preparation (whether carded or combed) have some bearing on what twist to choose.

This writer would suggest to use 2.30 turns per inch for the 4.69 hank in question.

If local conditions require more or less twist—very well, increase it a tooth or decrease it one tooth, as the case may be.

Very often, when putting on a new hank count or new material, we may not quite hit the correct tension and lay. If such a condition is encountered, be sure the lay and the tension will get the proper attention before jumping to the conclusion that the new hank looks undertwisted.

Here is the way the writer handles any roving hank twist changes.

1. Calculate proper lay as follows:

$$\text{Laps per inch} = 4 \times (\sqrt{1 + 8\ \text{Cts}} - 1)$$

(Cts. means hank-counts)

2. Calculate twist per inch as follows:

$$.5125 \times (\sqrt{1 + 8\ \text{Cts}} - 1) \times \frac{1}{L}$$

wherein Cts. is again hank-counts and L is the grader's length for stock.

3. Calculate approximate tension gear and for the first doff or more keep close watch whether the tension needs taking up or slackening.

Here is an easy way how to best calculate the factor $(\sqrt{1 + 8\ \text{Cts}} - 1)$, using the contributor's new hank 4.69.

(a) $8 \times 4.69 = 37.52$
(b) add $1.00 = 38.52$
(c) take square root $\sqrt{38.52} = 6.2$
(d) Subtract $1.00 = 5.2$

We now enter 5.2 in place of $(\sqrt{1 + 8\ \text{Cts}} - 1)$ as indicated in Calculation number 2.

$$.5125 \times 5.2 \times \frac{1}{L}$$

and since L = 1 5/32 or 37/32, we get

$$.5125 \times 5.2 \times \frac{32}{37} = 2.3 \text{ turns per inch.}$$

CONTRIBUTOR No. 7318

How to Set Shuttle Boxes

The opening or entrance of the shuttle box should be one-eighth to one-quarter inch wider than the end of the shuttle box and care must be taken to have the shuttle enter freely. By saving the entrance to the boxes wider than the ends, the shuttle will check gradually as it enters with little chance of it binding or rising off of the race plate. The binder or swell should be set so that when the shuttle is fully in the box, the protecting dagger will clear the bunter by one-quarter inch. Care must be taken not to have the picker or picking stick bang against the back box plate. The binder or swell spring must be adjusted strong enough to prevent the shuttle from rebounding while the loom is in motion.

In multiple box looms great care must be exercised in adjusting the binders and swells. They should all be bent in the same manner so as to raise the protecting dagger high enough to clear the bunter. The binder of swell springs must be strong enough to hold the shuttle from rebounding as otherwise it will cause the fixer considerable annoyance. The boxes must be set about 1/64-inch higher than the lay race plate, but never lower. If the boxes are higher or lower than the race flate same can be raised or lowered by regulating the extension rod. Sometimes one box will be even with the lay but when another box rises or lowers it will be out of line. This can be fixed by adjusting the malleable tip in the compound levers. Other causes such as loose or worn nuts, bolts and screws, or loose stud will effect the timing and line of the shuttle boxes.

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4. The shed closes too soon.
5. Shuttle is too heavy.

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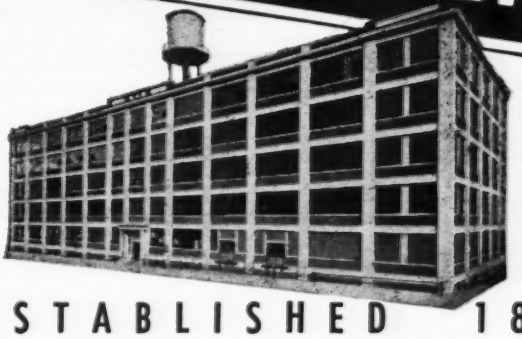

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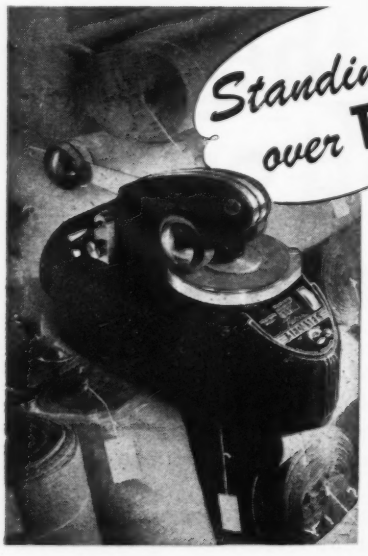

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214. NORMA-HOFFMANN BEARING CATALOG—NORMA-HOFFMANN BEARINGS CORP., Stamford, Conn.

215. TANNATE BELTING — Leaflet describing Rhoads Tannate leather belts and their uses and advantages in textile mill operation.—J. E. RHOADS & SONS, Philadelphia, Pa.

218. LEATHER BOOKLET NO. 202 — Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, Solid Round Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

218. BALL BEARINGS ON TEXTILE MACHINERY—Catalog 9 gives advantages of ball bearings, describes types, illustrates each type of textile machinery.—THE FAFNIR BEARING CO., New Britain, Connecticut.

219. LOOM MOTORS AND CONTROLS—Bulletin of polyphase enclosed motors and manual starting switch.—GENERAL ELECTRIC CO., Schenectady, New York.

222. NEEDLE AND BALL BEARINGS—Catalog 404 gives ball bearing data with data on selection of proper bearings; Catalog 42 outlines use of needle bearings, including textile uses, types, installation, lubrication and general data. Both issued by TORRINGTON CO., Torrington, Conn.

223. SHORT CENTER PIVOTED MOTOR DRIVES—Complete tabulation paper pulleys, pivoted motor drive bases showing selection tables, engineering tables, prices. Price Sheets 860 and 861.—ROCKWOOD MFG. CO., Indianapolis, Ind.

224. LEATHER BELT DRIVES—Clear, concise non-technical descriptions of short-center pivoted motor leather belt drives with easily used drive selection tables, other pertinent data. — SOUTHERN BELTING CO., Atlanta, Ga.

225. BRONZE BEARINGS—64 page catalog of standard sizes of textile and industrial bearings, graphited oil-less bearings, bronze bars, babbitt metals.—THE BUNTING BRASS AND BRONZE CO., Toledo, O.

240. REEVES VARIABLE SPEED CONTROL—Catalog G-397, 120 pages containing numerous illustrations and examples of variable speed control equipment applications in textile industry.—REEVES PULLEY COMPANY, Columbus, Ind.

241. LEATHER BELTING—Quick-reference catalog makes it easy to pick right belt for each drive. Application and maintenance suggestions. Cements, dressings.—GRATON & KNIGHT, Worcester, Mass.

243. ELECTRICAL MACHINERY CATECHISM—40-page book on electrical machinery—also bulletins on electric motors and pumping equipment.—FAIRBANKS, MORSE & CO., Chicago, Ill.

248. BEARING AND TRANSMISSION SERVICE—48 page booklet on hangers, pillow blocks, bearings, etc.—CHAPMAN TRANSMISSION CORP., Buffalo, New York.

249. TENTACULAR DRIVE—NO. A117—32 pages illustrated describing complete line of leather belting, proper application and maintenance. Contains numerous tables and technical information.—ALEXANDER BROS., INC., Philadelphia, Pa.

250. NATIONAL POWER RECOVERY PLAN—Save power wastes throughout plant. Complete booklet with plan and working material to save power with minimum time and effort.—L. H. GILMER CO., Tacony, Philadelphia, Pa.

251. GILMER BELTS FOR THE TEXTILE INDUSTRY—40 page booklet on belting and drives for all textiles. Includes engineering information, tables, formulas.—L. H. GILMER CO., Tacony, Philadelphia, Pa.

252. TEXTILE MACHINERY LUBRICATION—Illustrated booklet giving Lubriplate applications for all types of textile machinery.—LUBRIPLATE DIVISION, FISKE BROS. REFINING CO., Newark, New Jersey.

253. HOW TO GET THE MOST FROM YOUR LEATHER BELTING—Illustrated booklet on leather belt installation; maintenance; cleaning; dressing; aligning shafting, pulleys.—AMERICAN LEATHER BELTING ASSOCIATION, New York City.

254. **WARTIME CONSERVATION**—Recommendations for saving critical materials in electrical equipment and speeding present production.—WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh, Pennsylvania.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

302. LUNKENHEIMER CATALOG 78 — 136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights.—THE LUNKENHEIMER CO., Cincinnati, Ohio.

303. BROWN AIR-O-LINE CONTROLLERS—This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive, 32 illustrated pages describing the various Brown Controllers.—THE BROWN INSTRUMENT CO., Philadelphia, Pa.

304. MORTON NICKEL IRON QUICK OPENING HANDLE GATE VALVE—Illustrated leaflet describing the new Morton Valves for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Manufactured in nickel, stainless steel and stainless steel trim.—MORTON MACHINE WORKS, Columbus, Georgia.

305. FOXBORO METERS — Illustrated 48-page Bulletin 200, describing full line of recording, indicating and integrating meters, for measuring steam and water distribution.—THE FOXBORO COMPANY, Foxboro, Mass.

308. THE BROWN MOIST-O-GRAPH — 16 page booklet describing the Brown Moist-O-Graph which measures, records and controls the moisture content of cotton warp yarns.—THE BROWN INSTRUMENT COMPANY, Philadelphia, Pa.

CARDING, SPINNING, WINDING, ETC. . . .

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405. YARN CONDITIONING AND TWIST-SETTING—Tenesol booklet on new conditioning agent for textile yarns.—BURKART-SCHIER CHEMICAL COMPANY, Chattanooga, Tenn.

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408. THE BOWEN SPINNER'S RECORD BOOK—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data.—U. S. RING TRAVELER COMPANY, Providence, R. I.

409. ROTO-CONER — Bulletin describing the new No. 44 Universal Winder, known as the Roto-Coner for winding knitting yarns, which has many new and distinctive features. — UNIVERSAL WINDING COMPANY, Providence, R. I.

410. FIBRE CONDITIONING WITH TEXSPRAY COMPOUND—36 page booklet on treating of cotton or cut staple fibers with Texspray Compound including the advantages and development of fiber conditioning.—THE TEXAS CO., 135 E. 42nd St., New York City.

411. THE VICTOR CIRCLE-D TRAVELER — Pamphlet describing this important advance in traveler design.—VICTOR RING TRAVELER COMPANY, Providence, R. I.

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WEAVING, SLASHING . . .

502. TEXTILE COUNTERS—Catalog T37 describing pick counters for looms, hank counters for spinning, yardage counters for cloth room, etc.—VEEDER-ROOT, INC., Hartford, Conn.

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Continued from Page 113

503. **HARNESS, HEDDLES AND REEDS**—8 page illustrated booklet on steel heddles, harness frames, mail-eye harness, jacquard heddles, etc.—EMMONS LOOM HARNESS CO., Lawrence, Mass.

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DYEING, FINISHING, CLOTH ROOM . . .

602. **ALUMINUM IN THE CHEMICAL INDUSTRY**—Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses.—ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

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605. **BUTTERWORTH ELECTRIC GUIDERS** — 6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider.—H. W. BUTTERWORTH & SONS CO., Philadelphia, Pennsylvania.

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608. **PROCTOR DYERS (IMPACT TYPE) COTTON, RAYON AND SIMILAR FIBERS**—Booklet No. 393 with illustrations of construction capacity and maintenance of above dryers. — PROCTOR & SCHWARTZ, INC., Philadelphia, Pa.

609. **LIXATE PROCESS FOR MAKING BRINE**—36-p. booklet includes installations in textile plants for regenerating water softeners; for dye exhausting agents.—INTERNATIONAL SALT CO., INC., Scranton, Pa.

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701. **TEXTILE CHEMICALS**—36 page booklet on uses and properties of chemical products.—ROHM & HAAS CO., Philadelphia, Pa.

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738. **MONOPOLE OIL**—Bulletin describing use for bleaching, boil-offs, dyeing, kier boiling, mercerizing, sizing and finishing.—JACQUES WOLF & CO., Passaic, N. J.

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KNITTING . . .

801. **THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE** — Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

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804. **FULL-FASHIONED HOSIERY MANUFACTURE**—Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery.—GULF OIL CORPORATION, Pittsburgh, Pennsylvania.

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SEWING MACHINES . . .

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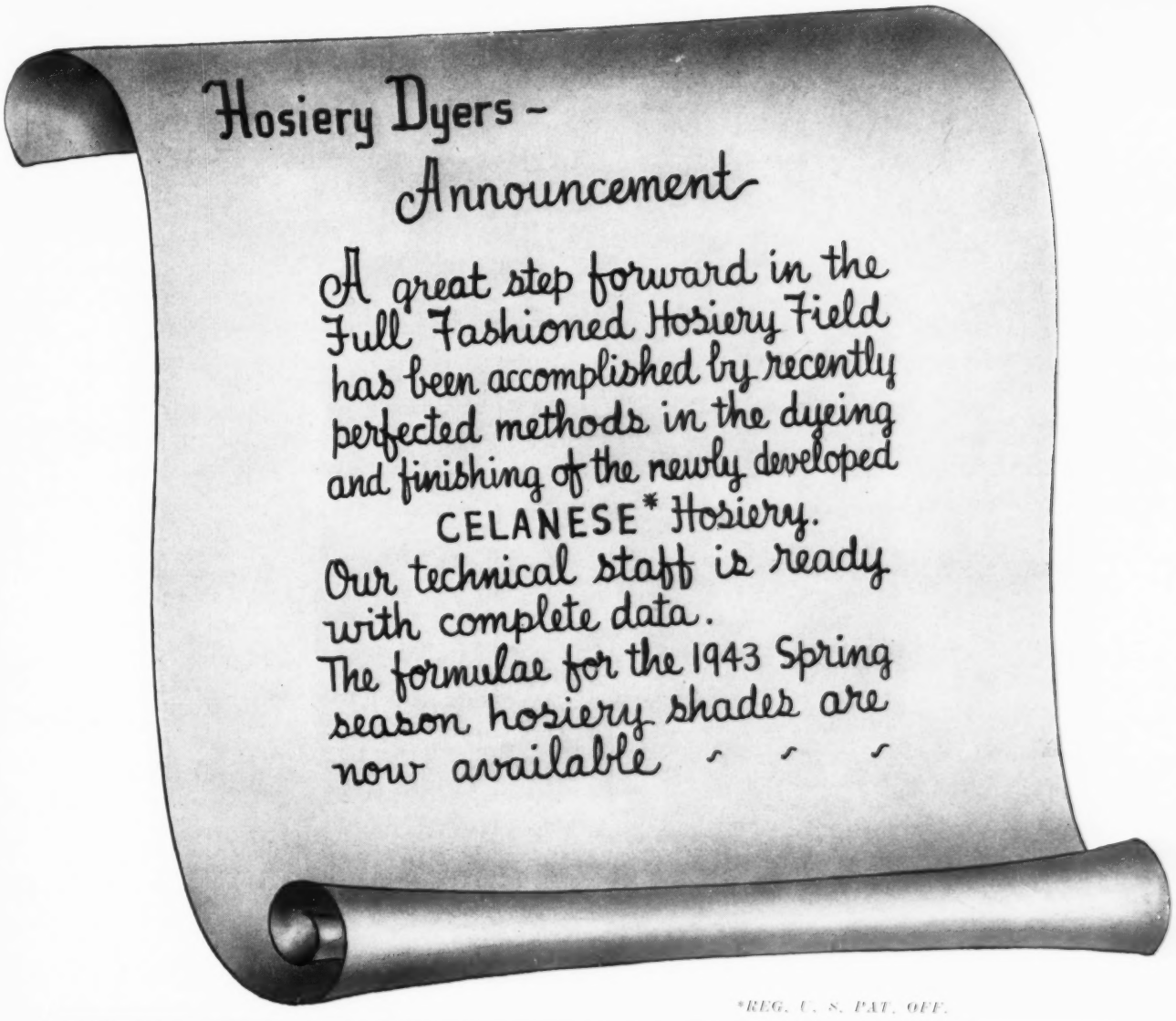
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This is why far-sighted management is redirecting its peacetime planning these days. Among the factors that are being seriously considered is the type of knitting equipment that will enable a mill to anticipate the new consumer demands after Victory. You have probably been thinking a good deal about this in terms of your mill's position. We, too, have been giving a lot of thought to hosiery mills' post-war problems. You may be interested in some of our views on the subject. Like to talk them over? Just drop us a line and we'll be glad to call at your convenience.

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KNITTING SECTION

Solving the Problems in Using Rayon in Full-Fashioned

Practical experiences of several mills in solving the problems encountered when changing from silk and nylon to rayon hosiery production.

EDITOR COTTON:

This is written in answer to the question on page 131 of the December issue of COTTON from "CONTRIBUTOR No. 7397", who asked for discussion on the examination of rayon hosiery, and suggested that the answers might be broadened to include experience on this subject in other departments, as compared with practice on nylon and silk.

Our production consists of 42, 45, and 51-gauge full-fashioned hosiery—all of which is composed of hosiery made of single unit, rounded heel constructions. Our numbers are made from 50, 75, and 100-denier rayon, the 50 denier being confined entirely to the 51-gauge machines.

Major problems in the manufacture of hosiery have come rapidly during the past 18 months—problems that have challenged the ingenuity and resourcefulness of the manufacturers, and when one stops to look back to review those problems, it is enough to make one dizzy. The problem of producing and handling fine denier nylon hosiery was not an easy one. The training required in order to get all departments properly functioning on this new product required time and expert handling.

Then, when rayon made its debut in the hosiery field, it looked most discouraging, not only to the manufacturer but also to the workers. Undoubtedly, many good full-fashioned knitters, who are now doing other work, dropped knitting as a vocation simply because the picture looked so very discouraging. A year ago some of us must have doubted that rayon would ever perform satisfactorily on a full-fashioned machine. Those days are passed, however, for now we see the dozens of hosiery made from rayon rolling from the machines in comparable quantities to those formerly made of silk.

I will attempt to comment briefly on some of the experiences we have had in meeting many of these problems, particularly as they relate to rayon full-fashioned production.

First of all, it is my opinion that the back-racked or rounded heel type of construction is a satisfactory way of producing rayon stockings, and those who are attempting to manufacture by the old legger-footer method are greatly handicapped.

The difficulties encountered in topping and transferring are tremendous and expensive, not only from the standpoint of labor cost but also from loss resulting from additional waste that is bound to accumulate, etc. Our 42-gauge machines were the last group of our hosiery machines to be converted from the legger-footer type to the single unit construction. We find that the 42-gauge stockings as a style are just as acceptable made this way as are the finer deniers. All our customers prefer this type of construction to the old legger-footer method, and I might add that their preference is based on sufficient experience in handling and distributing this type construction.

It has been our experience that a portion of the saving resulting from the elimination of the topping and footing operations necessarily has to be spent in additional mending in order to take care of the runner-backs or "floats" resulting from the knitting operations in the widening section of the heel area. We have not been able to develop a plan of operation on our machines that will entirely eliminate this difficulty.

In our grey examining department, when manufacturing silk goods, we formerly paid our grey examiners a given price per dozen for examining the grey hosiery. The goods that were to be mended were separated from the good work at this point. Our grey examiners have always carefully clipped the loose threads and looping ends while doing their examining. Later, when our production consisted largely of nylon, we changed our system of examining, paying our examiners by the hour. We placed together one examiner and one mender in order that the nylon goods could be handed over from the examiner to the mender and mended immediately, eliminating subsequent handling operations. We found it impossible to handle nylon without causing some pull threads, therefore any handling operations that could be avoided meant less repair work required by hand.

Now that nylon hosiery is out of the picture and our production is on rayon, we have returned to our former method of paying our examiner operators by the dozen. Our examiners separate the various types of menders from the good work and later have them picked up and placed in various bins for the subsequent mending operation. The good work is immediately bagged up for dyeing.

We have one or more operators constantly re-examining the work from the grey examiners. The purpose

of this is to keep always informed of the type work each operator is passing in order to avoid difficulties in the finishing department resulting from goods having been dyed that should have first been mended in the grey.

It is rather amazing to see such an extraordinary product today being made from a yarn that less than a year and a half ago was considered unsuitable for ladies' full-fashioned hosiery—all of which is just another tribute to the ingenuity of the American mind and the determination to master obstacles.

CONTRIBUTOR No. 7402

EDITOR COTTON:

While, frankly, we do not recognize any differences in the fundamentals of examining rayon hosiery and the process which we formerly used on nylon and silk, we are happy to give such information as we can on the subject in answer to the request of "CONTRIBUTOR No. 7397" for discussion on this point.

We use an expanding form which receives the examined stocking in a pair of rollers, which rollers convey the stocking to a dye net. There is a counter, and when two or three dozens (depending upon the weight of the stocking) have been placed in the dye net, the counter halts operation of the machine and the dye net is bundled preparatory to going to the dyehouse.

In general, it is more practical to put fewer dozens to the dye net than we did with nylon or silk because of the greater bulk of the rayon stockings.

Our operators are paid on a piece basis and a percentage of their work is re-examined. If, upon re-examining the goods, it is found that the inspector has been careless, she is penalized in that a lower rate is paid her for her total production.

CONTRIBUTOR No. 7403

EDITOR COTTON:

In a recent issue of "KNITTING KINKS" (page 131, December COTTON) "CONTRIBUTOR No. 7397" requested discussion on any changes made in the examination of rayon hosiery, and in the method of paying examiners, as compared with former practice in handling silk and nylon hosiery. He asked for discussion on the basis of either full-fashioned or seamless (circular knit) stockings.

In processing rayon through our grey goods department, we generally find very little difference between this yarn and nylon or silk. There is of course a tendency on the part of rayon to roll; it is "slicker" and somewhat harder to handle. Depending upon size and type, some rayons are definitely easier to handle than others.

We found that after a reasonable transition period, our loopers, seamers, inspectors and menders were readily able to adapt themselves to rayon, and are processing rayon equally as well or better than silk or nylon.

Our inspecting procedure is unchanged except that we have reduced the pressure on our examining forms from ¼-inch to ½; ¼-inch on 100 denier and ½-inch on 75 denier.

Our examiners have always been paid on a piece rate basis, which is the same, at present, as we paid for silk or nylon. It is well, I believe, to have a wage incentive system, with higher wages for higher production.

CONTRIBUTOR No. 7404

EDITOR COTTON:

I would like to try to reply to "CONTRIBUTOR No. 7397" and his question concerning possible changes necessary in examining, etc., in shifting from silk or nylon onto rayon hosiery (page 131, December issue of COTTON).

Regarding the inspection of rayon hosiery, the stumbling block as we have found it in changing from silk to rayon is in not making allowance for the inelasticity of the rayon fabric. This makes it desirable to have a device that conforms more closely to the over-all dimensions of the various parts of the stocking than is necessary with a more elastic fabric like silk.

Illustrating this point, the diameter of the upper part of ladies' stockings being greater, more movement of the inspecting form is required to secure reasonable spreading out of the fabric for inspection, than with the more elastic silk where defects show with less expansion because the elasticity causes it to contract to a smaller diameter.

Opposite to this, if the ankle is knit tightly, as the better stockings are made today, over-stretching of the heel is likely to cause unnecessary damage if a defect already exists because the travel between too little and too much is relatively small.

These principles apply to either seamless or full-fashioned stockings.

Because each type of stocking is constructed differently and has different dimensions, if a device can be procured where the expansion features approximate the expansion that spreads out each section of the fabric to the most desirable degree, such will give the best results.

Regarding paying by piece work or day work, we have found the piece work system, properly administered, superior to day work. This is because the piece work system automatically applies elements of self-interest that attract and hold more of the operator's interest in her job.

When mills were very small and the owner kept in close touch with each operator, spot checking as a separate operation was not as important as with the larger mills of today. Consequently, re-inspection of about two per cent of each operator's work per day, and the grading of the pay in accordance with the quality of her work, has produced the best results. Either day work or piece work without spot checking allows the operator's mind to wander from her work and the manufacturer is not protected against excessive passing of defects.

With the piece work system, where the remuneration is based on both quality and quantity, the results have been better in quality and the unit cost lower than when day work was in force.

CONTRIBUTOR No. 7406

EDITOR COTTON:

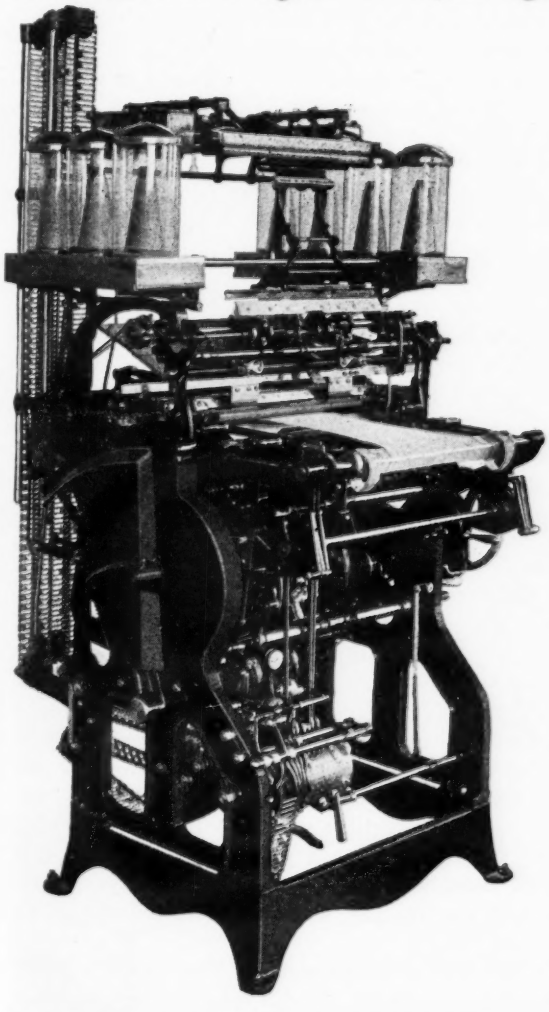
We noted the request of "CONTRIBUTOR No. 7397" on page 131 of December COTTON, for a discussion on the subject of examining rayon hosiery, with especial

The

MOST SUCCESSFUL WAR EFFORT IS A CHORUS

of the sum total of individual excellence in the ranks, each doing his part perfectly. In the stocking industry, outstanding performance is typified by the

WILDMAN Single-head, Single-unit Full-fashioned HOSIERY MACHINE



which is contributing an important part in the front line of production. By knitting a perfect stocking from top to toe in one continuous operation without stopping or change-over to leggers and footers it is saving thousands of man hours every day in progressive mills throughout the country.

★

Because of war work our production today is restricted to supplying repair parts.

WILDMAN

MFG. CO., NORRISTOWN, PA.

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"Throw YOUR SCRAP into the Fight"

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emphasis on any changes incident to going onto rayon instead of silk or nylon.

We of course have changed over in our full-fashioned mill from silk to rayon. In our seamless mill, where we formerly ran both silk and rayon, we now run only rayon. We have not found any changes necessary as far as examining the rayon hosiery is concerned, between silk and rayon. In the full-fashioned mill we used an expanding form for silk and find it equally as satisfactory for rayon. In our seamless mill we use close clipping tables and inspect our hosiery at the same time. In other words, we complete the ordinary double sole clipping and inspection in one operation by using this close clipping equipment.

As stated, we did this when we were running both silk and rayon and have not found any change necessary since we converted entirely to rayon.

We have always paid for our examining operations on a piece-work basis. We maintain a suitable number of re-inspectors whose duty it is to check the quality of inspection by the regular inspectors or examiners. As an additional check on the quality of our inspection, we penalize our inspectors if they pass an excessive amount of bad work.

It seems to me that the problem is not so much in the examining operation as in being certain to get proper knitting.

CONTRIBUTOR NO. 7405

A Second Letter to Joe Doakes

A KNITTING MACHINE FIXER

DEAR JOE:

Your reply to my last letter (page 132, December COTTON) was very encouraging, to say the least, and it prompts me to point out a few more things that might have slipped your attention.

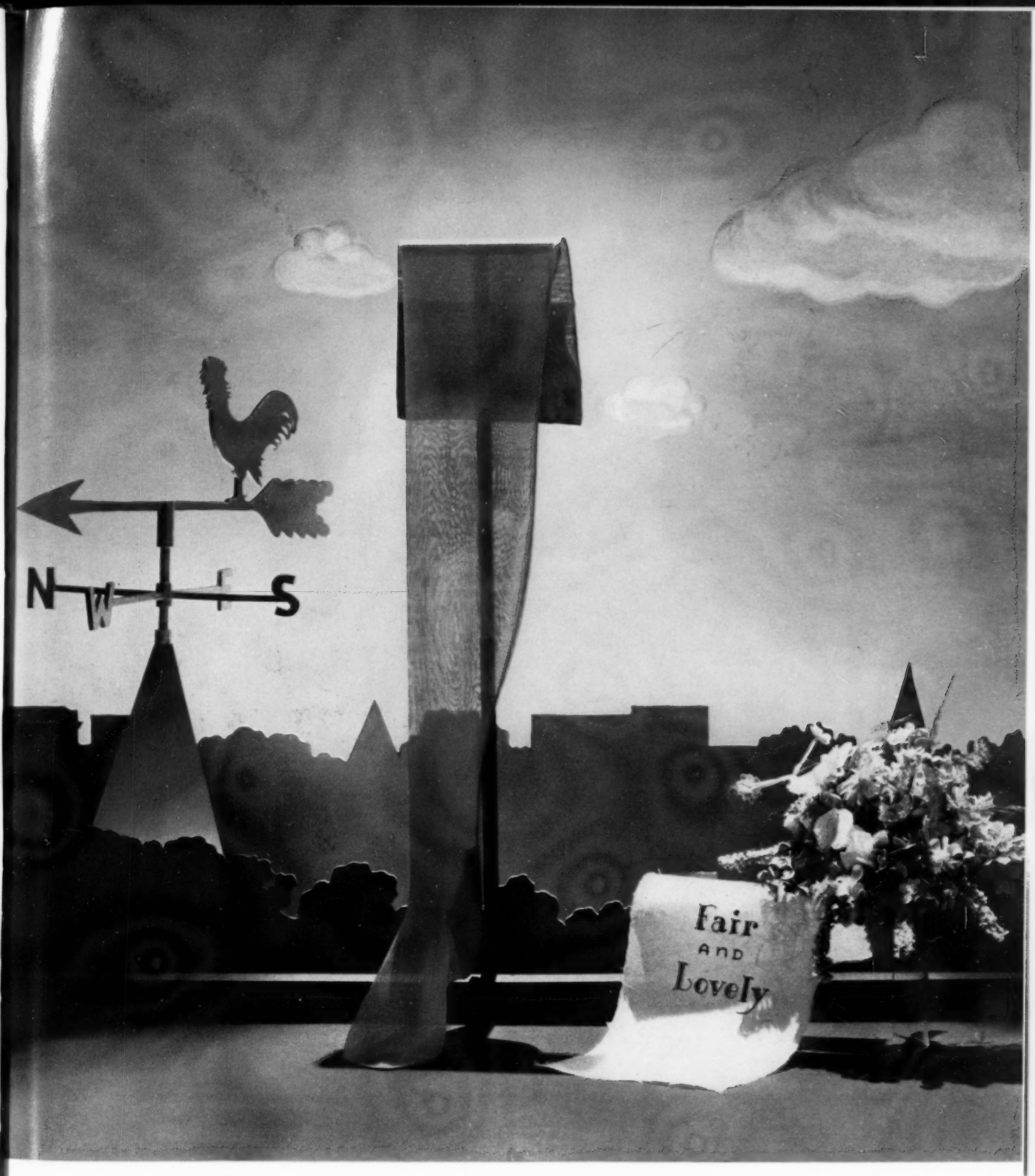
Before I forget it, Mr. Potterby dropped in for a while the other day for a look-see about the mill, sort of fishing around for new ideas to take home. He's a pretty swell guy, no matter which way you look at it, and I believe one of the reasons he has been so successful all these years is that he readily admits the other fellow might have something on the ball when it comes to running a mill. He told me he always welcomes criticism and that it has helped him out of many a hole when he hardly knew which way to turn. He never fails to apply any method which is better than something of his own, no matter where the idea originated, because no man is infallible, regardless of who he may be.

Our conversation eventually got around to the letter I wrote you, and while he thought some of it was a little strong, he admitted there is something to be gained by laying the cold facts right before your eyes, as it would be useless to waste time writing if there was going to be any beating around the bush. He was quite in accord with the idea that a little shaking up does all some good if we are big enough to take it and profit thereby. In fact, it struck home to him very forcibly when he happened to remember a smash that occurred in his mill a few days previously—a smash that could have been avoided by a little forethought on the part of the fixer.

This smash he referred to was not very much to begin with, just a set of leathers in a main friction on a full-fashioned machine that needed changing. They were functioning of course, not giving too much trouble, but you are no doubt well aware of how hard and glazed leathers become after being in use for a long time, and how important it is to the well being of the machine that these bad leathers be changed before they cease to perform their duty efficiently. Anyway, this smash took place and with it went about 400 needles, and 200 sinkers were stricken beyond further usefulness, to say nothing of the sinkers that had to be pliered, never to be quite the same again. You can well understand that once a sinker is bent and pliered, it still retains a kink which has a tendency to cut out and widen the sinker slot because it is impossible for any human to straighten a bent sinker to the point of perfection.

When Potterby got through telling me about this, it made me stop and wonder if you fully realize how imperative it is to install a new set of friction leathers at the right time, instead of being a little bit too late. You probably do, but do you always adhere to this practice? If you are a wee bit lax in replacing old leathers, the chances are you are piling up a lot of unnecessary work for yourself, to say nothing of the added expense to the mill which has placed its full confidence in your ability to prevent these avoidable smashes by staying on the job at all times. I find it quite impractical to disregard needed replacements, because if it so happens that something of this sort should occur to you, rest assured that the management does not let it slide over the dam like water. Do not forget there is nothing whatsoever to prevent your superiors from thinking their share and about all they could think is that you fell down on the job—which means that one bright or dull day you are going to be rudely awakened from a lethargy that never should have existed in the first place. Get it out of your head that you can fool the boss when you realize you have been neglectful, for he knows it just as well as you do. That's what he's paid for: to see to it that you do your work, and surely you don't want to be one of those fixers who must be told continually what to do and when to do it—now, do you?

And, Joe, you'd be surprised how easy it is to slip into this category if you once start on that downward trail, regardless of the reason. Always



Fair and Lovely . . . Every woman knows that the clear, subtle magic of her stockings helps her to attain the perfect grooming she so desires. Every hosiery manufacturer knows that good needles are indispensable in achieving even texture in full-fashioned knitting. Keep your knitting machines young and effective with TMW Needles. *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

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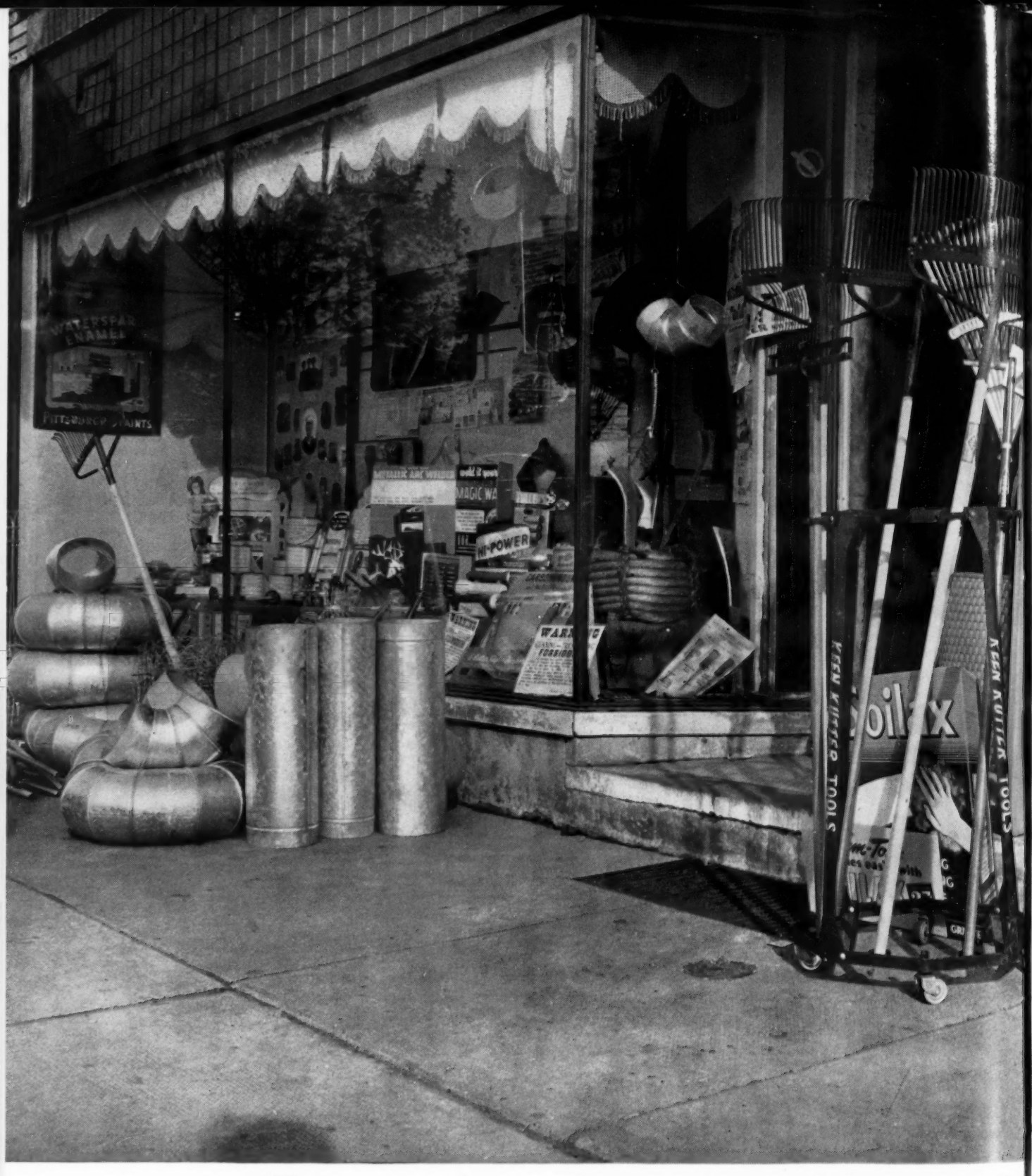

"Keep your shop and your shop will keep you."

WILLIAM TURNER

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing. Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA

The War Flags of TMW include: Army-Navy "E" awarded November 3, 1942; All-Navy "E" Burgee awarded May 18, 1942; Navy "E" Pennant awarded July 25, 1941.

remember it is easier to stay on top than to slip, making it necessary to fight your way back up again. Avoidable carelessness gives you a black eye that is difficult to cure, because even the operators spread your good and bad faults from mill to mill. Did you ever stop to think of that? Whether you realize it or not, you must build up a good reputation and, what's more, keep it up, not only by your acts, but by the willingness with which you perform them.

On the other hand, maybe there are occasions when you envy some other fixer who does not seem to have to care a whoop whether leathers are changed on time, and if there is a smash, there seems to be someone else always around to do the dirty work getting things in shape again. You might even resent the fact that while you sweat over some problem, he takes it easy—with no one apparently the wiser. Well, the best advice I can offer is to get such thoughts out of your head, and, above all, never attempt to emulate him, because, pal, he's not going any place. He's only milking his job for all it's worth without putting anything back in, and you know how long something like this can go on. I agree that sometimes it is hard indeed to work your head off and appear to get no place while someone else loafs along, evidently getting all the breaks, but remember this: if you have pride in your work and do it efficiently, it is written in the book that sooner or later you are bound to reap the harvest you justly deserve while our other friend finds himself in a predicament from which there is no salvation. You can learn much from the victories of others, but, above all, watch closely and it is surprising how much more you will learn by their mistakes, neglect of duty being the most serious of all.

Here's something else we might as well discuss while we are at it. If you ever get a job in a mill big enough to afford a head fixer, for goodness sake don't get into the habit of yelling for help at the least difficulty just because he is there. If you get into a rut like this you most surely have gone a long way back since the last time we met, and bear in mind these tactics are nothing more or less than the first signs that you are slipping or imbued with a lack of confidence, one being just about as bad as the other as far as you are concerned. Under these circumstances, it is high time that you took stock of yourself, old boy, admitting a few things to yourself which probably will not be pleasant company; but it will do you some good if your eyes are opened to weaknesses that you had no idea you were afflicted with.

As buddy to buddy, what would you do if it so happened you walked into one of these small mills where you necessarily had to rely on your own skill alone? A mill that is run down, as we say, a mill that needs someone with brains and fortitude and ambition. Surely you could never hope to handle a hot potato of this kind if you are in the habit of calling the head fixer for every little problem that arises, because you learn by *doing* things, not by having them done for you even if there is someone to lean on in emergencies.

Moreover, as long as we are on the subject, did you ever stop to think of those fixers in the smaller mills scattered about the country who have to overcome all difficulties, no matter what they may be? You and I should not hesitate one bit in taking off our hats to some of them for the things they accomplish with sweat and the inherent will to lick any problem that presents itself. Please bear in mind they have no one to turn to, no one to whom they can yell "wolf", and they either "put out" or get out, for it does not take the management long to find out the extent of their knowledge and willingness to work.

I don't know what you think of it, but for myself I believe it is an excellent idea for you to develop yourself to the point where it is possible for you to "put out" to the satisfaction of everybody. If you don't, there is no hope whatever of your ever getting that better job just ahead, that job that usually has more responsibility attached to it but at the same time pays more money. And you are interested in more money, aren't you? You wouldn't be human if you were not, but, remember, too, if you do not possess confidence to enable you to take over any set of machines in any mill, you are still a long way from something better, and furthermore you lack that something which as a fixer makes you valuable to a mill. Furthermore, confidence in your ability makes you more or less independent, depending upon your temperament to some extent, and if you think back a bit you will realize that occasionally the best fixers are as temperamental as a race horse about to break a world record. There are times when you might wonder how they get away with it, but there is no mystery about it at all—they know their business and the management knows it, too. Don't forget, these men live and eat with knitting machines, always mulling their problems over in their minds, making their occasional mistakes, but always coming out on top. You can do the same thing with a little thought.

I think I will bring this letter to a close now, Joe, and while I do not entertain the idea that you have all the faults I am writing about, you must understand that it is essential I mention them all so as to paint the whole picture. There would be no sense of my just mentioning a few things because I might pass up something that would have been of help to you. Some of the things I speak of may sound simple to you after all of your years of fixing, but there are some who have not been in this business as long as we have, so I think we should tip them off to some of the pitfalls—something no one ever took the trouble to do for us. So you see, my letters to you serve a twofold purpose: first, reminding you of a few things or as a "refresher course" if that sounds better, and, second, giving the younger hands a warning as to what to avoid.

Sincerely your friend,

EARL ROBERTS

Why Market Reports are Missing

The three knitting market and yarn market reviews that normally appear in COTTON *each month are missing from this issue because a sudden illness almost at "last copy date" prevented the regular correspondent who contributes them from preparing them. With best wishes for his early recovery, we promise their resumption beginning with the April issue.*

KNITTING KINKS

The Links-and-Links Knitting Machine

The 25th and last article in a series on the Komet and Links-and-Links knitting machines . . . . . .

IN PREVIOUS articles in this series we have discussed the *mechanism* which provides the means for pattern making on Links-and-Links machines, including the double patterning device. In this, our concluding article on Komet machines, we shall consider briefly the arrangement of pattern pins in the pattern drum and selector set-up in the upper cylinder.

Shown herewith are three reproductions of pattern lay-outs supplied by the machine builders—Fig. I, Fig. I-A, Fig. II, Fig. II-A and Fig. III. Fig. I shows the pattern drum lay-out for a given pattern. Fig. I-A the selector lay-out in the upper cylinder necessary to make the pattern.

Fig. II shows a different pattern drum lay-out and the selector lay-out necessary for this kind of pattern.

Fig. III shows a typical (or complete) lay-out.

Written instructions explaining these reproductions supplied by the machine builders, entitled "Principles of Pattern Lay-outs Links and Links Machines" are available, and we quote in part from them as follows:

Principles of Pattern Lay-outs On Links-and-Links Machines

"This is an explanation of how the required needles are selected either to remain in the top cylinder or to be transferred to the bottom. The pattern drum rack wheel has 36 teeth, so that patterns which have 2, 3, 4, 6, 9, 12, 18, or 36 courses may be made.

"There are 18 selector butt positions on the Links-and-Links machine. In the example given, each square represents a stitch. An 'X' is put in a square to represent a rib stitch. For a plain stitch the square is left blank.

"The courses in the pattern are lettered, and a line is drawn around a complete pattern. Under-

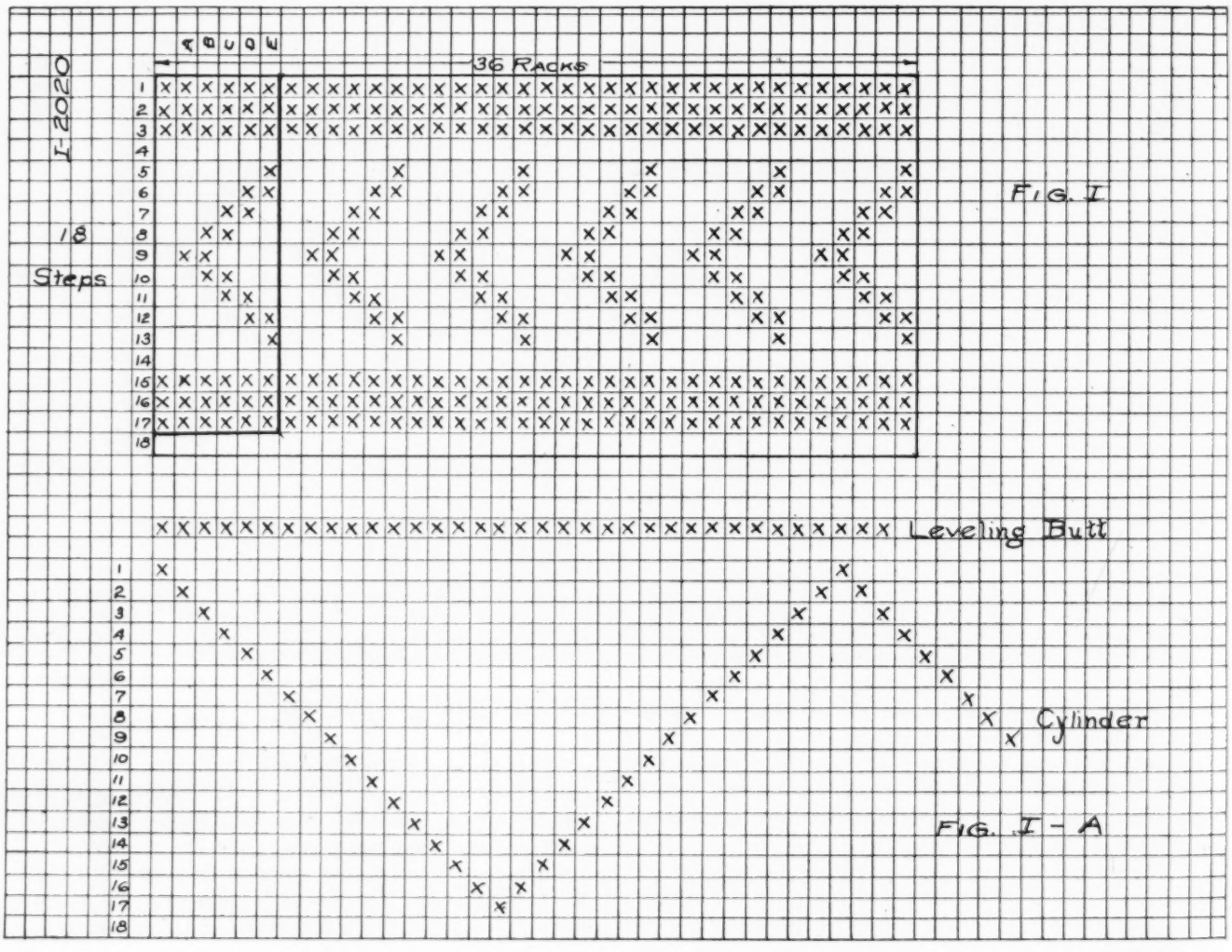

FIG. I

FIG. I - A

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— and in the South
ABERFOYLE MANUFACTURING COMPANY
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Representatives in principal textile centers of the world

★ DURENE 2-Ply Mercerized Cotton Yarn • COMETCORD 4-Ply Mercerized Cotton Yarn for 6 x 3 Lines • S-P-Y, the Moisture Resistant Mercerized Yarn • NEOPHIL Nylon Thread for Seaming & Looping Nylon Hosiery • PREFERRED BRAND Seaming & Looping Thread • ENTWIST Mercerized Cotton Yarn and Nylon Twisted Combination • WEARTWIST, the Domestic Mercerized Lisle • DYED YARNS

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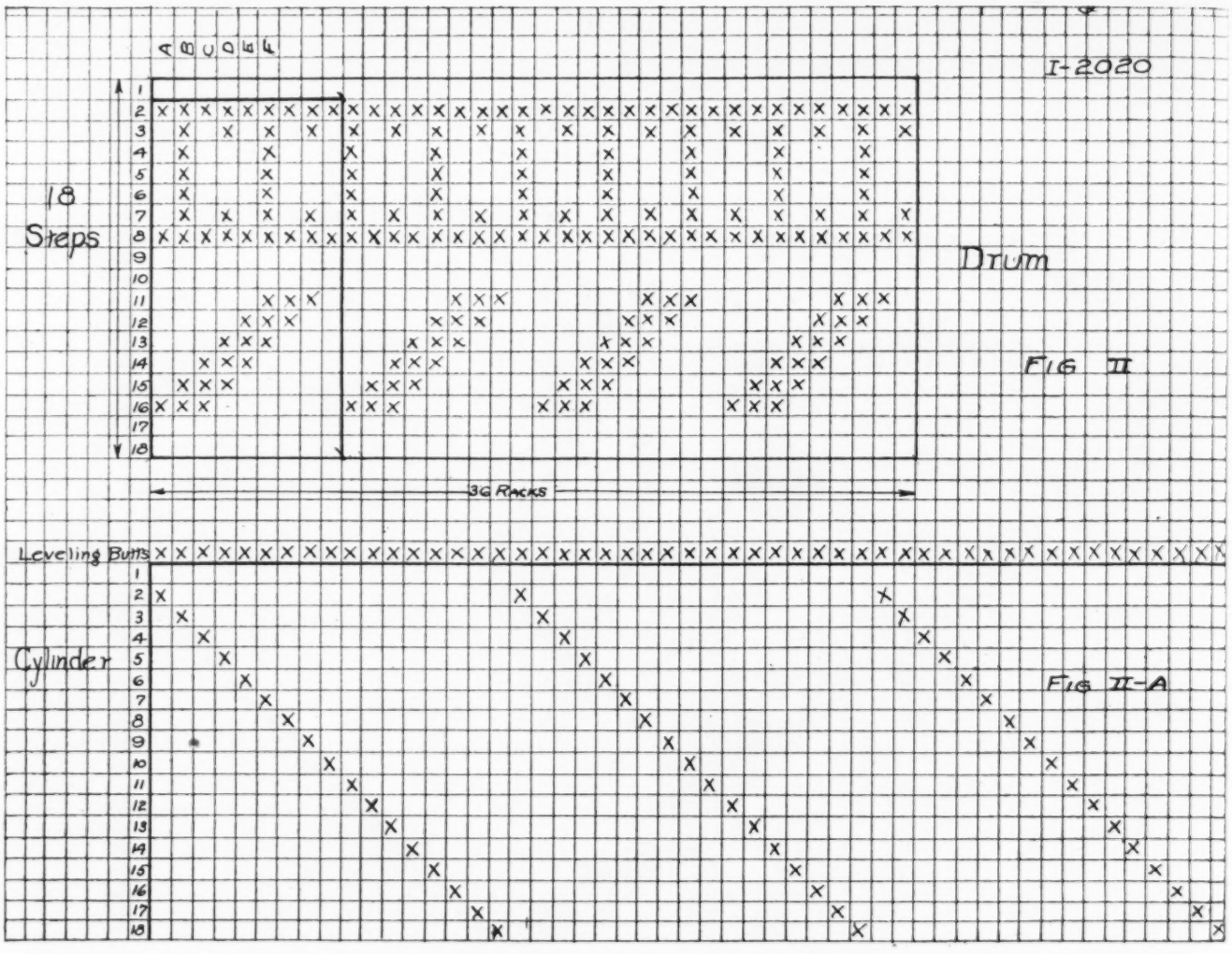


neath the pattern in Fig. I-A, 'X's' are placed in the cylinder representing the selector butts, and the numbers at the side indicate their respective relation to the holes in the pattern drum, which is shown to the right of the selectors. Along the top of the pattern drum, numbers are placed showing the number of courses, or racks, in the pattern. A square on the paper represents 1 selector height, 1 drum hole height.

"Fig. I. This shows a chevron bordered by a panel of rib five needles wide. The numbers above numerate the stitches. It will be seen that 5 to 13 inclusive are rib stitches in courses A, B, C, D and E respectively, so that 5 different selector heights will be needed; 4 and 14 are plain throughout, so a separate selector is needed for each. This gives us 17 different selector heights. It will be noticed that one side of the pattern is exactly the same as the other, except that it slopes the opposite way. In such patterns, the selectors may always be set up in the form of a 'V'. See Fig. I-A.

"Course 1 (opposite A, Fig. I). So that the needles 1, 2, 3, 9, 15, 16 and 17 will knit rib, their respective selectors must not be cammed down, so pins must be placed in the pattern drum. Since 9 is represented by No. 9 selector in the cylinder, and 1, 2, and 3 by numbers, 1, 2, and 3 in the cylinder, pins are placed at these heights.

"Course 2. As needles 1, 2, 3, 8, 9, 10, 13, 14, and 15 are required to knit rib, pins must be placed in the drum, which will prevent the selector levers from transferring them to plain.

"Course 3. In the same way it will be seen that pins are required at heights, 1, 2, 3, 7, 8, 10, 11, 15, 16, and 17.

"Course 4. Pins are needed at heights 1, 2, 3, 6, 7, 11, 12, 15, 16, and 17. It will be seen that needles 4 and 14 knit always in the bottom, so that a pin is never placed in the drum opposite its controlling selector numbers 4 and 14 to prevent it being transferred down to plain (frame stitches.)

"Fig. II. This shows a pattern which could not be folded over, therefore a 'V' set-up could not be used. A straight line set-up is required as shown in Fig. II-A.

"Note: When changing the selectors, the first long butt selector will still be the first long butt in the new pattern, although it may of course be at a different height. When setting up a pattern which has rib panels in it, as in Fig. I, it should be seen that the panels border the foot bottom correctly, as in an ordinary rib sock.

"In Fig. III there will be found a typical lay-out."

From the foregoing instructions it can readily be seen that pattern making on Links-and-Links machines is not a difficult task. However, a person who sets machines up must understand the patterning mechanism thoroughly to be able to select the proper selec-

Pleasant Surprise

The beautifully sheer, durable, fine fitting rayon hosiery now on the market comes as a pleasant surprise to millions of women prepared to sacrifice their cherished leg glamour. Surely, here is an achievement of which the industry may well be proud. Especially since rayon is virtually an unfamiliar material for the production of sheer hosiery . . . and its adaptation to existing methods and equipment presented many difficult problems.

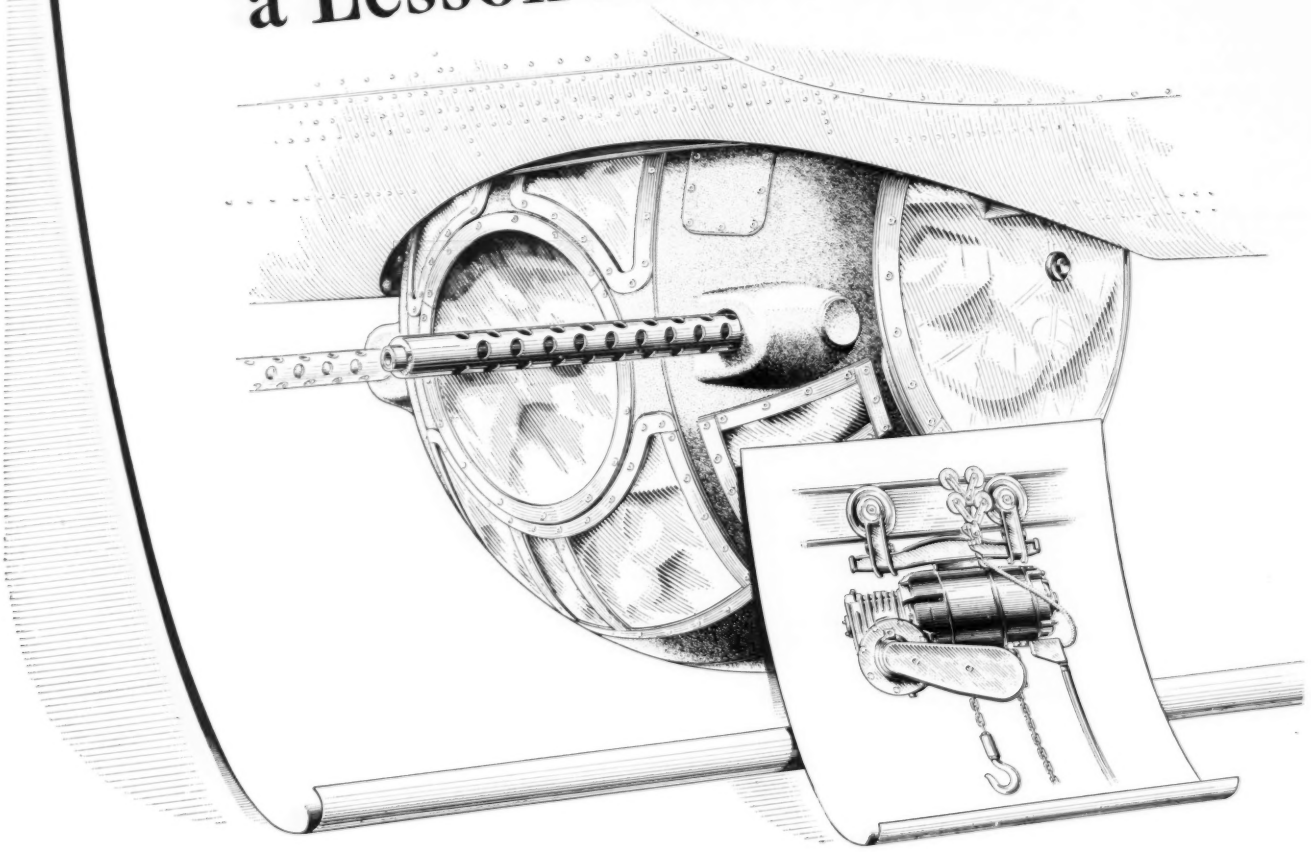
This has thrown a heavy burden upon the knitting also, for painstaking care and the utmost vigilance must be used. Here the *machine-made* superiority of Torrington Needles, with their extra smooth finish, fine temper and over-all uniformity, is proving to be of great value. Recognizing this, more and more mills are relying upon Torringtons exclusively to achieve and maintain high quality knitting standards.

The production of *your* rayon stockings will benefit by the use of these modern machine-manufactured, machine-tested needles.

Torrington Spring Beard Needles

SINKERS • DIVIDERS SPLIT DIVIDERS

The Plane Turret Found a Lesson in The Electric Hoist



THERE'S not much in common, perhaps, between a hoist and a bomber turret. The hoist works day and night —constantly starting and stopping, frequently overloaded, seldom lubricated. That's why hoist manufacturers turned to the Torrington Needle Bearing to make product performance more dependable.

The plane turret, on the other hand, performs its task in a single, short, action-crowded interval, followed by thorough overhauling. But in those few swift moments of aerial combat, there's no leeway for the failure of *any* part. So turret designers, too, selected the Needle Bearing, to give reliable performance—and many other needed features as well. Quick response, for example, as the gunner pivots and somersaults to keep an enemy fighter in his sights—that comes from the Needle Bearing's low starting friction. A few more inches of space in the turret's cramped quarters, made possible by the bearing's small size. More rounds of ammunition or more gallons of fuel on board—result of the bearing's weight-saving features. And faster turret production because of the bearing's ready availability.

WHEN YOU DESIGN YOUR POST-WAR PRODUCTS, there may be a hint for you in a bearing as versatile as this. Long life, high load capacity, faster speeds, compact design, less need of attention—aren't these just the features your customers will be looking for? Torrington engineers will show you how you can give your product these advantages with the Needle Bearing. For preliminary information on sizes and ratings, and for a list of many typical applications, write for Catalog No. 115.

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KEYED TO TODAY'S NEEDS

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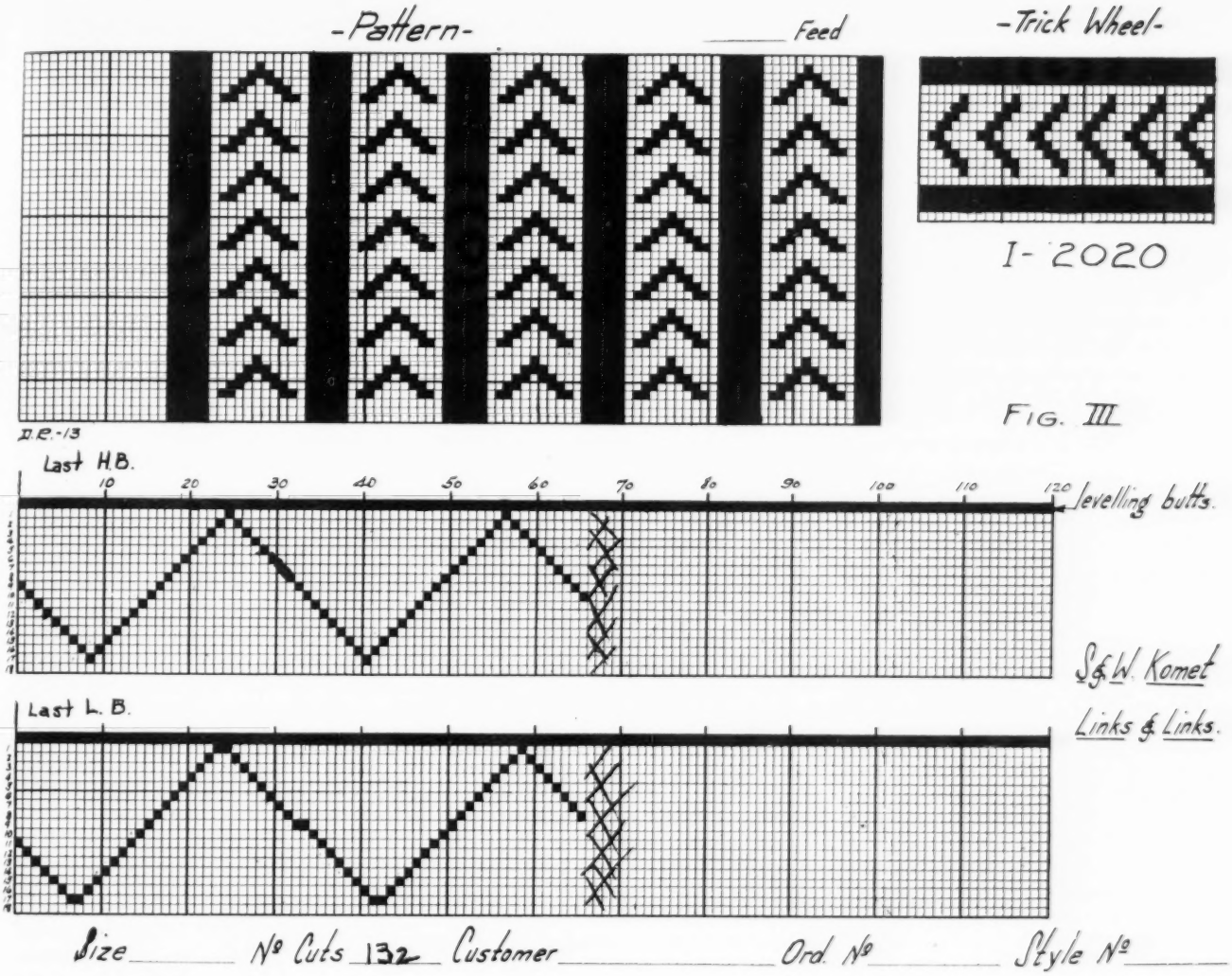

FIG. III

tor lay-out in the upper cylinder to go with the particular pattern he intends to make.

A large variety of patterns can be made by using either the "V" set-up or the straight line shown in Fig. I-A and Fig. II-A respectively. Bearing this fact in mind, much time can be saved when pattern changes become necessary, if designs are selected which permit using the selector set-up in the cylinder as is. In other words, if three or four different patterns are put into a line, try to make these on *one* cylinder set-up so it will only be necessary to rearrange the pattern pins in the pattern drum when changing from one pattern to another.

In one paragraph of the quoted instructions for Fig. I, we read as follows:

"It will be noticed that one side of the pattern is exactly the same as the other, except that it slopes the opposite way. In such patterns, the selectors may always be set up in the form of a 'V'. See Fig. I-A."

This quotation is the *key* as to which selector set-up should be used for a given pattern. Once thoroughly understood, it will save much time when the season for pattern changes, new samples and new lines arrives. One of the outstanding features of the Links-and-Links machines is that it produces one pattern as well as another; production goes on irrespective of patterns. On some types of machines, different patterns invite various complications in knitting, often hindering production to a marked degree.

In many larger mills, all new patterns and samples are made up in what is generally known as the experimental department. Here a group of men spend all their time developing new styles and patterns. They usually have one or more machines of the different types used in the knitting departments tied up for experimental work. This sort of thing costs money in more ways than one; however, it is one of the *musts* necessary to keep abreast of the times.

In smaller mills, samples are developed in the knitting room and machines used for this purpose are put back into regular production as soon as possible. Here again, Links-and-Links machines are time- and money-savers due to the short time required to change a machine, make samples and put it back into line production once more. This is a desirable feature for both large and small mills.

In closing, may we advise those who are fortunate to own Komets to use genuine parts, keep your machines in first-class condition, use them but do not abuse them, and last but not least, see that you get thorough and regular lubrication with the right kind of lubricants. These practices will keep your Komets running for the duration and long afterward.

And so, we take our leave, with our personal thanks to COTTON for the opportunity of preparing this series of articles. We hope our humble efforts have been helpful to the readers.

K. O. METZ

Evening School War Training at Georgia Tech

In conjunction with the Federal Defense Training Program and the Evening School of Applied Science, the A. French Textile School of the Georgia School of Technology, beginning March 1, is conducting evening school war training courses. There are two plans provided. The first, under the head of textile processes, will include instruction in the common textile subjects of yarn manufacture, weaving, design, analysis and testing, involving both theory and laboratory practice.

The second or alternate plan allows for more specialization, and in one case, as under mill methods and management, will take up instruction in yarn manufacturing and weaving; or, if preferred, courses in textile standards may be taken which will involve fabric design and analysis, and textile testing and inspection. In each case, the schedule work will call for two nights per week of three hours each.

The applicant in any case should come from some branch of the textile or related industry, as the purpose of these training courses is to prepare for better service in this particular field of work. The entrance requirement for both men and women calls for the completion of a high school course or its equivalent. It is anticipated that each of the proposed courses will be approved and financed by the Federal Defense Training Program as in the past, in which case there will be no tuition charge to the individual or firm.

◆

New Uses for Rayon Staple Fiber

Numerous new uses continue to be developed for rayon staple fiber, according to a statement by the American Viscose Corporation. United States production of rayon staple fiber in 1942, it is estimated, totaled approximately 155,000,000 pounds as compared with 122,000,000 pounds in 1941 and 81,000,000 pounds in 1940.

Progress made in developing rayon staple fiber and extending its fields of usefulness has been the result of constant laboratory research and experimentation on the part of the leading rayon producers, it is pointed out.

At the present time, rayon staple fiber is being called upon to replace fine, long staple cotton in shirtings, pajamas, hose and hosiery, underwear handkerchiefs, labels, draperies and upholsteries. In other fields it is being used in rugs and carpets, men's suits and women's woolen and worsted type dress and suiting fabrics formerly made with various types of wool; in towels and tablecloths previously made of linen; and in blankets and ski clothes formerly made with wool and imported Chinese or Indian cotton. Still other uses recently developed for this versatile fiber include mittens and gloves, lint-free lens wiping fabrics, slipper felts and shoe fabrics, babies' diapers, kerosene wicks and mantles, interlinings for men's suits and Army officers' uniforms, and sweaters that were formerly made with fine cashmere and angora wools.

◆

American Yarn Opens Eastern Sales Offices

American Yarn and Processing Company, Mount Holly, N. C., have announced a change in their sales representation for the eastern territory. The company has opened its own sales offices in Philadelphia, at 3701 North Broad Street, under the direction of William S. Montgomery. In New York City, the company's offices are located at 2806 Empire State Building, under the direction of Roland Swallow. Eastern sales representation was formerly by Schoolfield and Company.

The present officers of the company, involving some recent promotions, are:

Rush S. Dickson, president; William H. Suttenfield, vice-president and treasurer; I. C. Lowe, vice-president; C. Edwin Hutchinson, assistant vice-president and purchasing agent; Eugene F. Redding, assistant vice-president and sales manager; William S. Montgomery, assistant vice-president; T. Jackson Davis, secretary and assistant treasurer; and E. Rozella Abernethy, assistant secretary and assistant treasurer.

◆

"Cotton Oil Cars"

Cotton will play an important role in speeding oil shipments to the eastern coast if current plans of the Office of Defense Transportation to convert 100 steel box cars into petroleum carriers are extended. According to The Cotton-Textile Institute, 50 of these cars will be equipped with Mareng cells. These units are to be made of 9-ounce cotton duck, 280 yards of which will be required in the installations in each car. The cells are completely covered and once installed remain rigidly in place. Another lot of 50 cars is to be equipped with Flexi-Tank units made of No. 6 cotton duck 60 inches wide. Forty yards of the fabric are required for each tank and four tanks will be installed in each car. In the case of both types of cotton tanks, central intake and outflow valves control the flow of oil. To help control the surge of oil when the cars are in motion, each car is divided into four compartments in each of which a container unit is installed.

Other possibilities of using cotton in still another form in the transportation of fuel oils are being studied. Alternate layers of a thiakol synthetic rubber compound and of loose cotton fiber are sprayed on the four walls, floors and ceilings of box cars to build up a thick, durable "skin" wholly impervious to oil. It is planned to use a single layer of narrow cotton duck to reinforce the "skin" in the corners of the car and also in the seams where floor and roof are joined to the walls.

◆

New Jungle Boot

A rubber-and-canvas jungle boot to replace the standard issue service shoe, which has been found unsatisfactory in jungle and tropical service, has been designed and developed by the Quartermaster Corps according to the War Department. It was learned that jungle conditions and chemicals in tropical soil rotted leather in a very short time, and that the total life of a leather shoe under such conditions was about two weeks. To overcome this condition, Quartermaster Corps technicians developed the new footwear with a rubber sole and cloth top about 12 inches high. The rubber sole contains both crude and reclaimed rubber and is not affected by jungle moisture or soil conditions. The cloth top, dyed an olive drab, provides a cool, porous covering for the foot and lower part of the leg, and prevents leeches and thorns from reaching the skin. The new boot can be cleaned and washed easily, and is expected to last, under the most adverse conditions, many times longer than the regular issue leather shoe.

◆

No Salesmanship

Recently a certain foreman made the mistake of making a hard-boiled statement to his men that, whether they liked it or not, they were going to have to work seven days a week from now on. He told them that these were company orders; that the orders were given at Government request. He told them that any man who squawked was a slacker. When Saturday came he warned them that they had better be sure to be in on Sunday. Six out of his 17 men did not show up on Sunday.

On Monday he threatened to fire them if they knocked off again. On the following Sunday five of these same six men and four others were absent. When Monday came around and they all returned he didn't dare to fire them, because he would be getting rid of more than half of his force.

As a result of his failure to sell his men on the need for the extra hours, he had aroused their antagonism. Most of them really would have felt obligated to come in, if he had not practically dared them to stay out. As the result of the absenteeism, the productive efforts on both Sundays were of little value. In making threats which he could not carry out, he lost prestige. Now his absenteeism is even more difficult to control.—*"Management Information", Elliott Service Co., Inc.*

On Duty or Off

Smart? Yes, and highly efficient too—the new adjuncts to our fighting forces—and when on duty or off, many of the Fibres or Fabrics which they wear are treated with *Scholler Processing Products:* for Beauty, Style, and Long Service Life.

For over 35 years *Scholler Products* have been recognized as a *standard of quality.*

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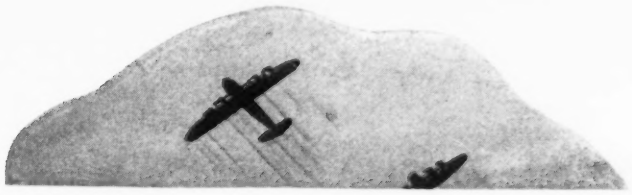
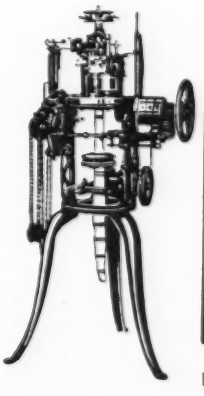
Manufacturers of Textile Soaps, Softeners, Oils, Finishes
Collins & Westmoreland Sts., Phila., Pa. • St. Catharines, Ont., Canada



"FIRST THINGS COME FIRST"

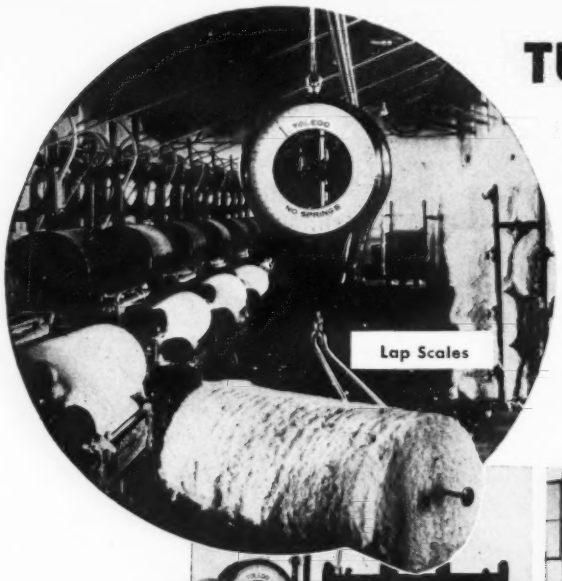
FRANKLIN D. ROOSEVELT, PRESIDENT OF THE UNITED STATES

Your Uncle Sam has right of way insofar as our facilities are concerned. His requirements and his orders come FIRST, and we are proud to serve our country. At the same time, we regret that it may be necessary to ask our customers — users of Brinton Knitting Machines — to wait, until we can care for their needs.



BRINTON
Circular Knitting Machines
3700 KENSINGTON AVE.
PHILADELPHIA, PA.

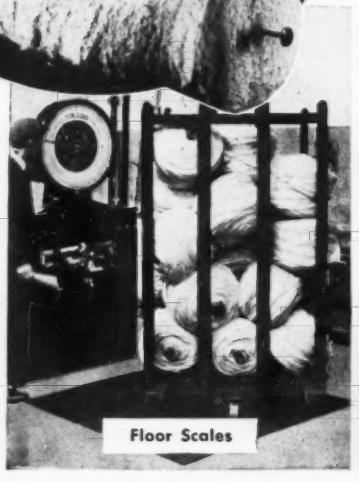
BUY WAR SAVINGS BONDS AND STAMPS

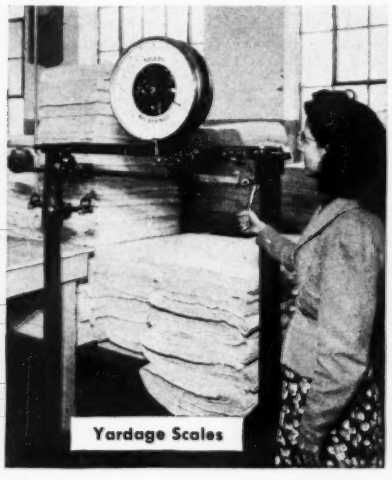


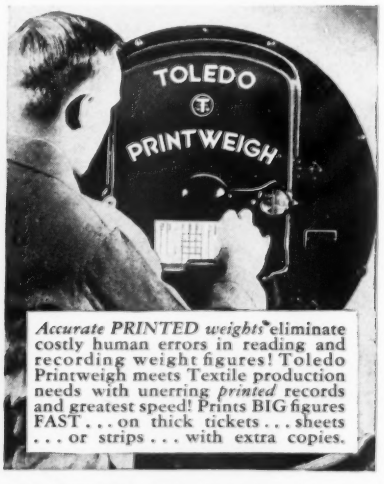
TURN OUT TEXTILES *Faster*

● Now that top-speed is demanded in textile production . . . there's a greater-than-ever need for TOLEDO *accuracy, speed* and *dependability* at every weighing point in your plant! Toledos appeal to practical men . . . these scales expertly designed for every textile weighing job . . . ruggedly built to "take it"! Send now for illustrated "Toledo Textile Book." Toledo Scale Company, Toledo, Ohio.

TOLEDO TEXTILE SCALES







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CAN HELP YOU MEET GOVERNMENT SPECIFICATIONS ★ ★ ★

WHETHER the requisition calls for cotton, wool, rayon, silk or mixtures, there's a Laurel Oil or Finish to help meet specifications and speed delivery. If there's a special purpose compound needed, we shall be glad to suggest formulae. Laurel technicians and research department have for over 30 years sought and found solutions to many textile processing problems. This experience is yours for the asking.

Throw your scrap into the fight!

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WM. H. BERTOLET'S SONS *ESTABLISHED 1909*
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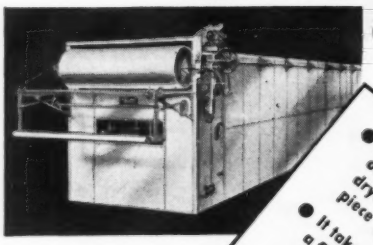
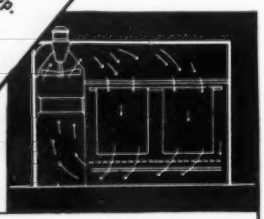
PROCTOR *Loop* DRYER



- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
- As the girts on which the goods is suspended move through the dryer, they revolve intermittently, so that no part of the goods is in contact with anything for any appreciable length of time.
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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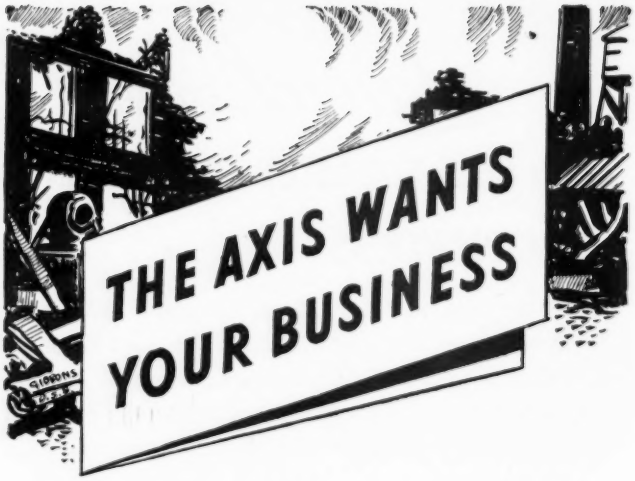

THIS is more than a war of mechanical monsters clashing in the night . . . more than a war of production.

It is a war for markets—*your* markets! The Axis wants your business—wants to destroy it for once and all.

With so much at stake, there is no doubt you will want to do everything you can to meet this Axis threat. Two ways are open: Speed production and BUY BONDS. The only answer to enemy tanks and planes is *more* American tanks and planes—and your regular, month-by-month purchases of Defense Bonds will help supply them. Buy now *and keep buying.*

HOW THE PAY-ROLL SAVINGS PLAN HELPS

When you install the Pay-Roll Savings Plan (approved by organized labor), you not only perform a service for your country but for your *employees.* Simple to install, the Plan provides for regular purchases of Defense Bonds through voluntary pay roll allotments.

Write for details *today!* Treasury Department, Section R, 709 Twelfth Street, NW., Washington, D. C.

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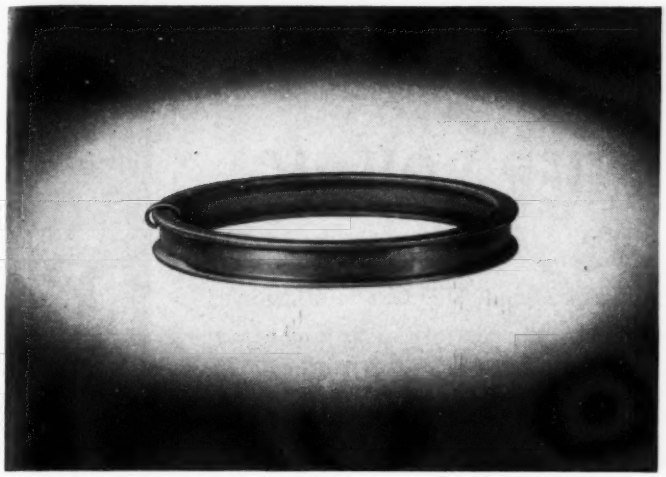
This space is a contribution to Victory by

COTTON



Veteran of 7 Years' Service Proves Circle-D's Save Rings

After 40,160 hours' service with Victor Circle-D Travelers, the ring illustrated shows little more wear than it did a few months after it was installed. It was used on warp spinning in a large southern mill, and the other rings on the frame showed even less wear than this one.

Since wartime shortages make it necessary to get every extra hour of service possible out of your operating equipment, the ring-saving qualities of the Circle-D are more important today than ever.

But the many mills using Victor Circle-D Travelers not only save rings—they save travelers, too. No other traveler equals Circle-D performance records, especially on combed yarns. Improvements of 40, 60, 100,—even up to 200 hours-before-changing have been frequently reported.

Talk to a Victor representative about your spinning and twisting. He can help you get the best production and the most service possible from available equipment.

Reason why the Circle-D is so easy on the rings is its "free-floating" action, as proved by this special photo taken with the traveler in motion at a speed of 8800 R.P.M. With contact only on the inside flange of the ring, it runs cooler, and more smoothly. Result — fewer ends down, better yarn quality, and longer traveler life.

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"The Leather with the Hair on"

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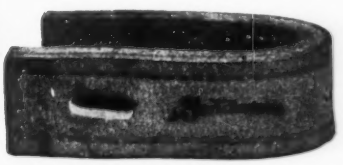
Cotton Loom Picker



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Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
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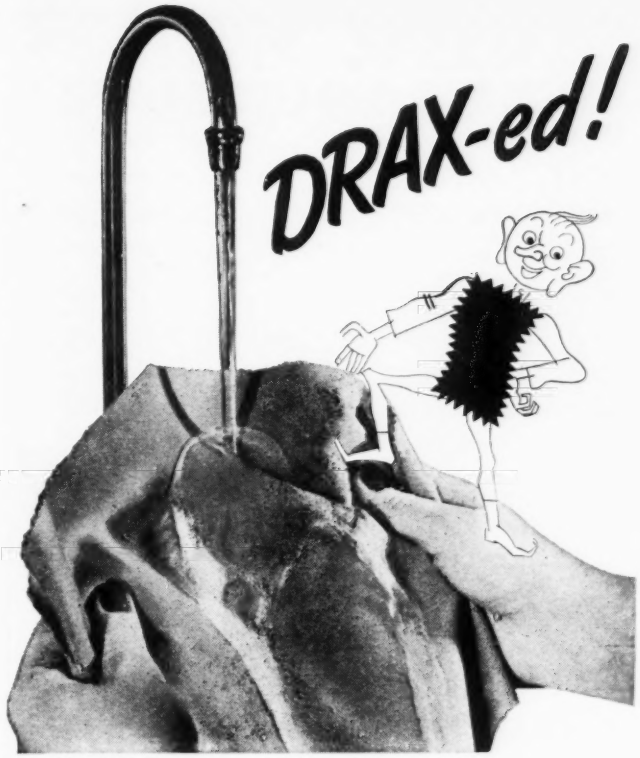

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(made by the makers of Johnson's Wax)

The list of DRAX uses . . . and users . . . grows. DRAX is now providing water repellency (and other values) to army and navy uniform cloth, material for work clothes, shelter tents, blankets, sleeping bags, etc. . . . and for civilian fabrics of many kinds.

And what are the facts about DRAX? Here are a few important characteristics . . . characteristics made possible by a special method of regulating the colloidal particle size

DRAX remains completely stable in solution during storage;

DRAX can be applied at temperatures varying from room to boiling;

DRAX can be diluted with ordinary tap water;

DRAX may be applied in a single bath, in any available type of padder.

Results? DRAX gives your fabrics a high degree of water repellency and resistance to spots and stains. Treated fabrics stay clean, fresh, and new-looking longer. And there's no harmful effect on "feel," color, odor, porosity, etc. DRAX is also available in special formulations containing *mildew-resisting* agents.

Get ALL the facts about DRAX. Write

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ONYX FINISHES FOR RAYONS

onyx

DESPITE war restrictions Onyx chemical research is making progress in the processing and finishing of Rayon Yarns—Fabrics and Hosiery. Each day contributes some improvement that enables mills and dyehouses to make better Rayon products. Onyx research chemists and field technicians working with the textile industry are gradually overcoming many obstacles. Much of the improvements in Rayon can be credited to new finishing materials and methods employed. In this work the Onyx organization have had a long experience and recent intensified efforts gives them an intimate knowledge of the many problems involved. If you too have a problem in Rayon, perhaps Onyx can be of service. Your inquiries are solicited.

BUY WAR BONDS AND STAMPS—EVERYDAY

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Selig's Floor Maintenance Materials and Methods

Are creating real economies in many mills.

Request our trained representative to make a survey of your plant.

Recommendations will be made without obligation. Write

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ATLANTA

HERE'S YOUR MAN!

That's right Mr. Spinner, a Dary representative is "your man" for solving the Spinning or Twisting problem that's keeping your production "on the defensive".

For over 45 years Dary has been improving its Ring Travelers, until today it produces a Traveler of universally recognized superiority and durability!

Swing to Dary Travelers and you'll swing into "offensive" production speed!

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of Raybestos-Manhattan, Inc.
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"DANDUX" CANVAS PRODUCTS

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NO. 100 LAUNDRY BASKET

Built to exacting standards, of finest material, Dandux Baskets, Hampers and Trucks are preferred and recognized in the textile field. Their superior construction assures longer life and more service—yet costs no more than the ordinary!

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All Kinds of
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Spinning, Twister, Spooler and Quiller Cylinders—Card Screens—Picker Screens—Condenser Screens—Comber Tins—Waste Chutes—Lap Aprons—Aspirators

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MORE SPEED?

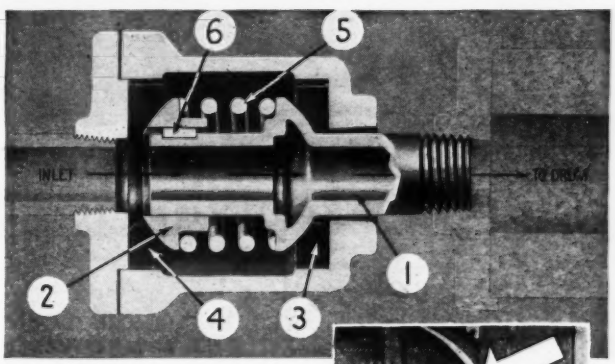
Look to your STUFFING BOXES

IF you are looking for more production from your dry cans, slashers, or sanforizers, don't overlook the Johnson Rotary Pressure Joint. Your old stuffing boxes may be as good as they ever were, but compared to the Johnson Joint they waste valuable time, slow up production, and demand a lot of unnecessary care and attention.

The packless, self-oiling, self-adjusting, self-aligning design of the Johnson Joint is shown below. Because it puts an end to all stuffing box troubles it eliminates many causes of machinery shutdown saves valuable production time. More than that, it introduces a simpler way to provide for syphon drainage of cans and slashers, which reduces heating-up time, and permits higher, more uniform can temperatures.

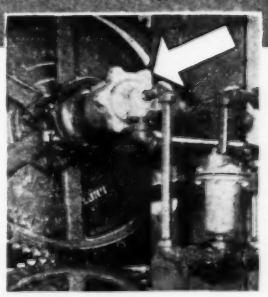
Add to these important increases in production efficiency the fact that the Johnson Joint saves enough in maintenance alone to pay its own way, and you will see why so many mills have been quick to adopt it.

Write for new catalog



Note the Trouble-free, PACKLESS CONSTRUCTION

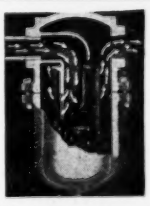
Nipple (1) is fastened to roll or drum. Collar (2) is keyed (6) to nipple. Carbon graphite seal ring (3) and bearing ring (4), which eliminate oiling and packing. Spring (5) is for initial seating only; in operation joint is pressure sealed—self-adjusting. Ball and socket joints at nipple and rings absorb angular misalignment; space between nipple and housing provides for lateral misalignment.



They *must* be good. Over 50,000

JOHNSON *Rotary Pressure* JOINTS

installed in less than 10 years.



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The Johnson Corporation

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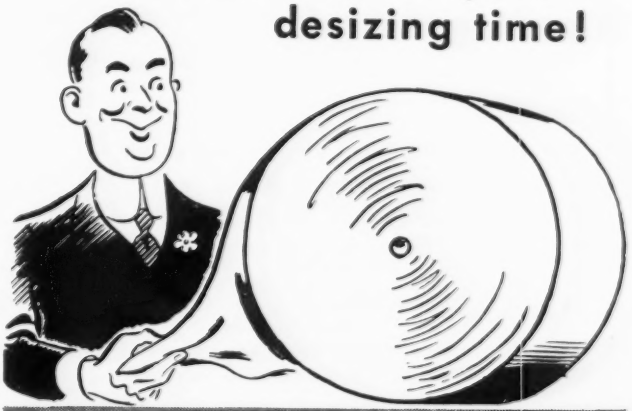
EXSIZE may cut your desizing time!



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● Time economies are more essential than ever these days. You may be able to save minutes in desizing—and in following operations—by using EXSIZE, the concentrated malt enzyme desizer!

EXSIZE works rapidly, with a gentle, natural action. Its malt enzymes are easier on all fabrics. It is thorough—washes out completely—and leaves fabrics soft, clean and better able to take a uniform bleach and dyeing, with a reduction in the amount of chemicals needed for these operations.

EXSIZE may do even more than save you time. It may save you money, too—in its low cost, ease of preparation and lowered operational expense. Write for our free descriptive booklet, then try EXSIZE on a sample run. If you desire, a trained Pabst field man will help you. There's no obligation.

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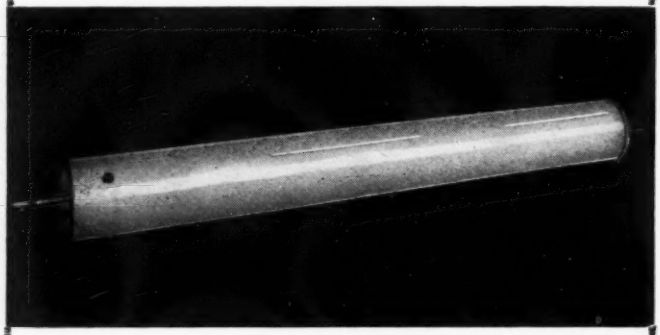

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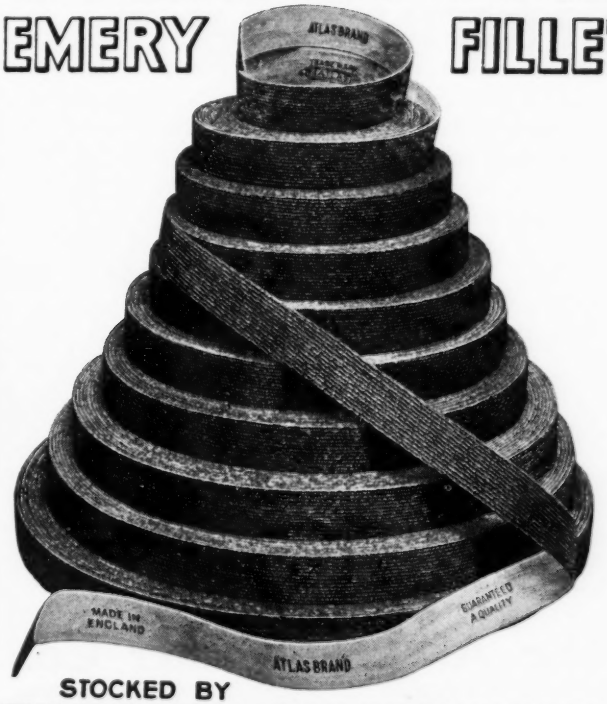

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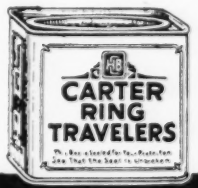

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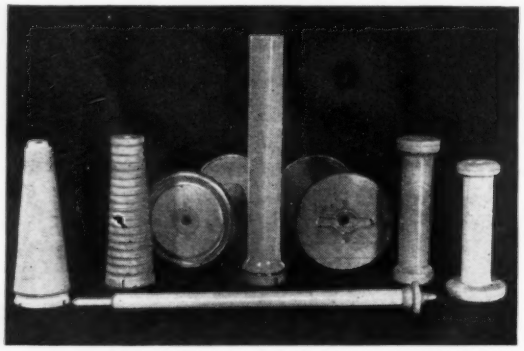

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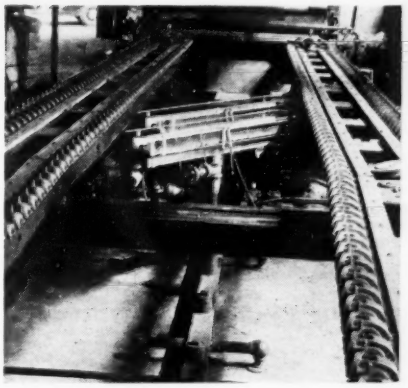

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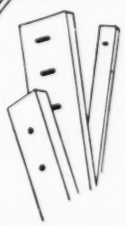

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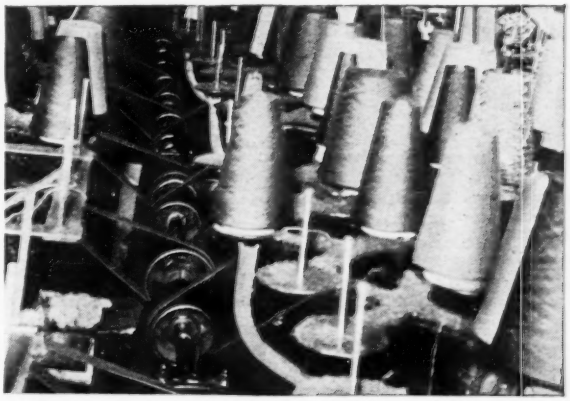

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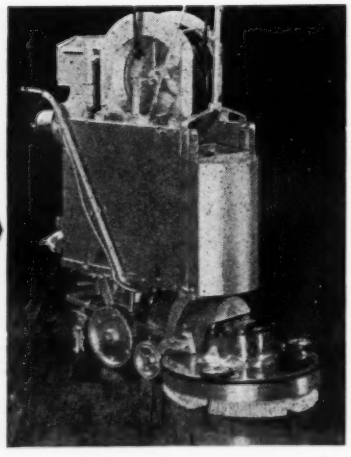

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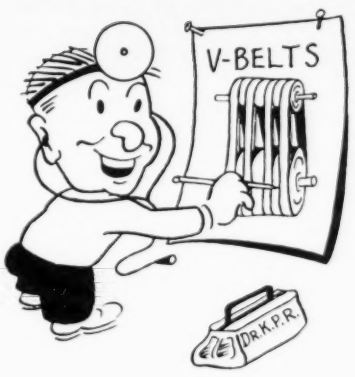

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A Loose V-Belt Will Break Sooner Than A Tight One . . .

You as a boy played "pop the whip", and if you were ever at the swinging end of the line you are familiar with the forceful snap produced by the "whip".

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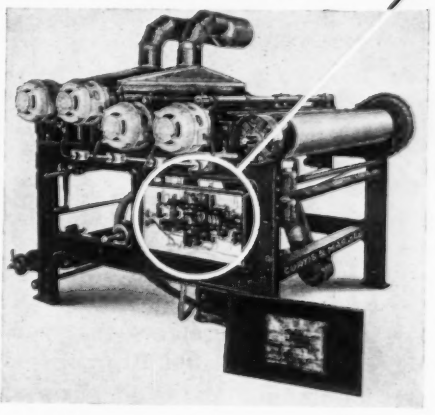

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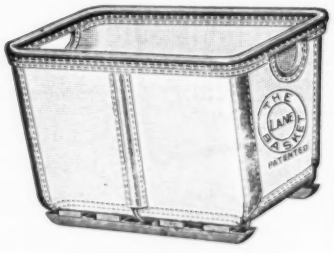

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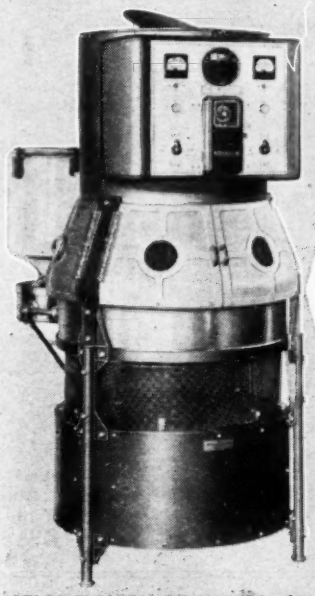

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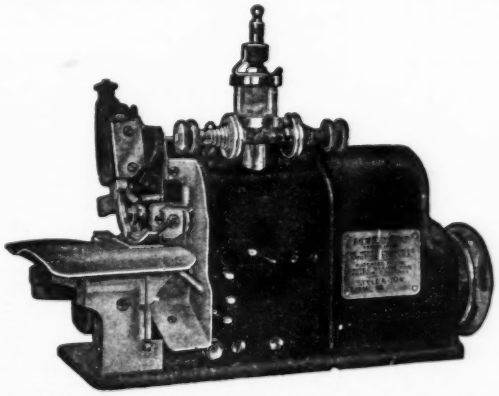

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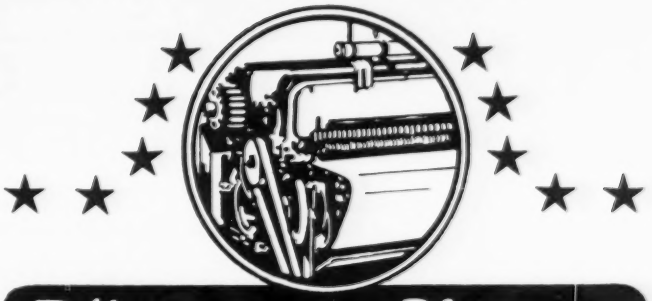

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PROVIDENCE, R. I. **CHARLOTTE, N. C.**

SOUTHERN OFFICE—131 West First St.—Charlotte, N. C.—L. Everett Taylor, Southern Agent
Southern Representative: H. B. Askew, P. O. Box 272, Atlanta, Ga.--Otto V. Pratt, Union, Mills, N. C.--W. S. Johnstone, Charlotte, N.C.

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BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

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Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

WANTED:

Nationally prominent company has opening for salesman with following among southern cotton mills and finishers.

Must have technical education and mill experience in textiles and a good sales background.

Resident of the South preferred. In reply, give complete information covering experience, education, and salary desired. Address Box 606, care of COTTON, Grant Bldg., Atlanta, Ga.

POSITION WANTED

Cotton Classer, warehouse man available. Experienced also in office details. Draft Exempt. Address Box 617, COTTON, Grant Bldg., Atlanta, Georgia.

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Well established young aggressive southern textile organization, servicing the entire southern textile industry, with relation to sizing, dyeing and finishing, is open for one or two non-chemical accounts with responsible firms.

In a position to represent on both a sales and service basis.

Facilities for carrying local stocks if necessary in our plant, sprinkler systemed.

This will be of interest to firms whose organizations have been depleted by war necessity.

Territory thoroughly covered by car, bus, train and plane. Address Box 608, COTTON, Grant Bldg., Atlanta, Ga.

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For large N. E. Mill weaving Fine Combed Cotton Goods Spinning 12s to 90s yarn. Must be over 40 years of age. Excellent opportunity for right man to connect himself with a successful organization at a good salary. Write giving full experience. Address Box 618, COTTON, Grant Bldg., Atlanta, Ga.

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Cotton man with 23 years experience in classing and buying, now employed, wants connection with southern mill. Married and draft exempt. Excellent references. Address Box 616, COTTON, Grant Bldg., Atlanta, Ga.

EATON AND BROWN

Patent Attorneys

1206 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.

Paul B. Eaton, Former member Examining Corps U. S. Patent Office

POSITION WANTED

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We invite correspondence with employers seeking men and men seeking positions. Over 40 years in business, serving Southern and Northern mills.

Charles P. Raymond Service, Inc.
294 Washington Street
Boston, Mass.

FOR SALE:

1 Saco-Lowell Slasher & Warper, without sizing tank.
1 6-spool Spooler, with extra Tail Block.

ARTHUR S. BROWN MFG. CO.
Drawer 1, **Tilton, N. H.**

FOR SALE:

Two 2,500 lb. capacity used elevators. Speed, Otis 50 feet per minute; Warsaw, 100 feet per minute. These machines are in first class condition. RAGSDALE ELEVATOR COMPANY, 153 Forsyth St., SW, Atlanta, Ga.

YOUR ADVERTISEMENT ON THIS PAGE will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,000 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Send in your advertisement today.

COTTON **Grant Bldg.,** **Atlanta, Ga.**

TAKE GOOD CARE of your LAWLOR FLOOR EQUIPMENT

Every owner of Lawlor Scrubbing, Waxing, Polishing Machines, Mop Wringers and Tanks, is cautioned to keep them in best running order.

REPAIR PARTS AVAILABLE

Check over all your Lawlor Machines and equipment and let us furnish you with any needed repair part to keep them operating efficiently.

We want to aid all our customers in every way we possibly can.

S. C. LAWLOR COMPANY

Makers of Quality Floor Equipment for 40 Years

121 N. Aberdeen St., Chicago, Ill.

USE 4-in-1 PAY ENVELOPES

To avoid extra bookkeeping on the new

VICTORY TAX

New 4-in-1 pay envelopes now are designed to handle the new Victory Tax as required by law, reducing clerical and bookkeeping work.

With this pay envelope, the flap is torn off when the employee receives his pay and this serves as a receipt as well as a record for you. Deductions are recorded for Old Age Benefit, State Unemployment insurance and other deductions at the same time.

Write for a sample of the 4-in-1 today to see how it will save you time on your own payroll records.

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P. O. BOX 1267 ATLANTA, GA.

STEEL SPIKED. SPROCKET DRIVEN.

Knotwood

U. S. PAT. NO. 2258035

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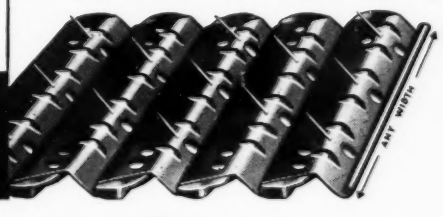
FOR ALL TYPES OF AUTOMATIC FEEDS



YOU GAIN 6 WAYS!

1. More and better production, because sprocket drive eliminates slip. **2.** Fireproof. **3.** Less upkeep due to all metal construction (pins ground, heat treated and polished). **4.** Less dirt. Knotwood stays bright and clean. **5.** No choking or excessive waste. Stock can not work between interlocking slats. **6.** Save power. The Knotwood is light and works quite slack.

More than 1000 in use.

SJÖSTRÖM MACHINE CO.

LAWRENCE, MASSACHUSETTS

Southern Agent: M. Bradford Hodges, 161 Spring St., N.W., Atlanta, Ga.

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THE STANDARD DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems— our technical men are at your service . . . Write or 'phone.

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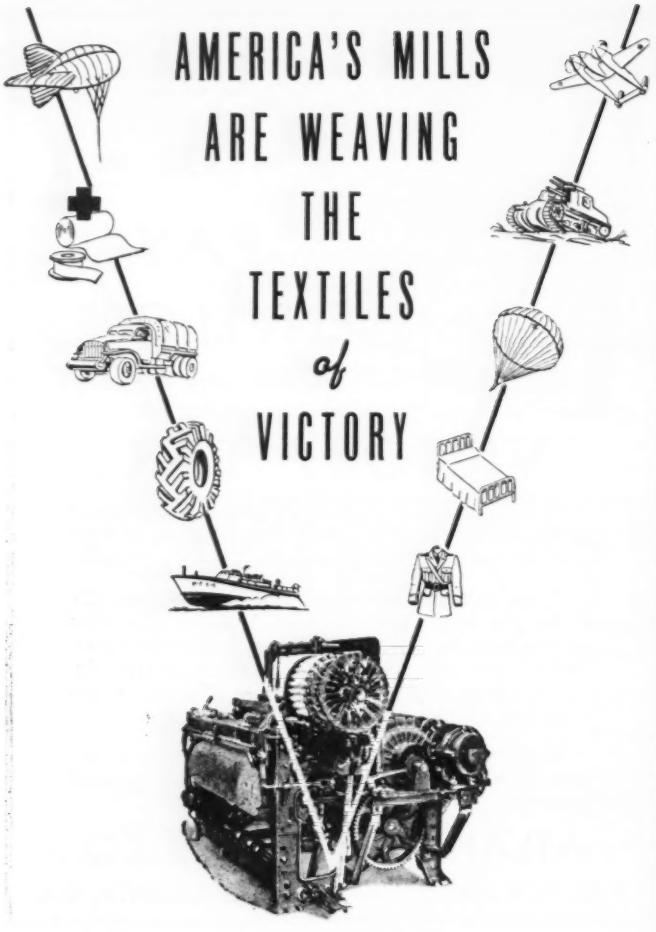
180 MADISON AVENUE, NEW YORK



MORE than 300 pounds for every man in the Services! That's the staggering amount of textiles being supplied to our armed forces right now.

Clothing, of course, makes up part of that poundage—but only part. For there is scarcely a piece of equipment made that does not use textiles somewhere in its construction. From lifeboats to army jeeps, from tanks to planes, from parachutes to camouflage—textiles are on active duty.

Burkart-Schier is helping to make possible the production record being set by the textile industry — the mile after mile of needed fabrics which are speeding off America's looms. Burk-Schier chemists and textile chemicals are working right along with the textile industry, helping to process all sorts of military fabrics, giving fabrics necessary characteristics, making fabrics fit to fight!

BURK-SCHIER

BURKART-SCHIER CHEMICAL CO.

Manufacturing Chemists for the Textile Industry

CHATTANOOGA, TENNESSEE

PENETRANTS • DETERGENTS • SOFTENERS • REPELLENTS • FINISHES

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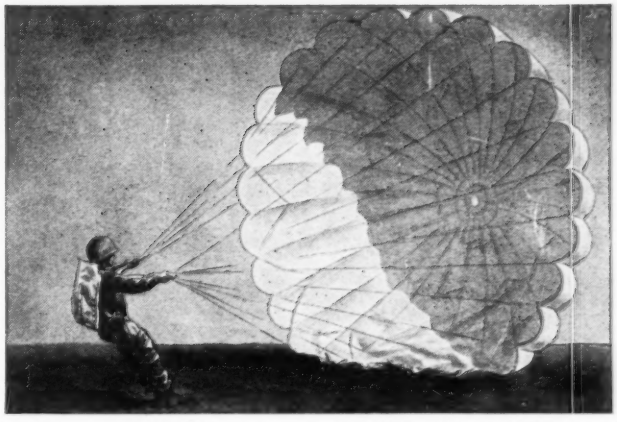

Textiles for Victory

The parachute is but one of the more spectacular of hundreds of textile products, every one of which is vitally needed to gear and maintain our fighting forces. In quantities of many millions, the Textile Industry must produce these items ON TIME, using only existing equipment. In your efforts to achieve MAXIMUM production, bear in mind that a change-over to new rings or new styles of rings can often accomplish gratifying results — especially if the rings are DIAMOND FINISH.

We make all types of Holders

WHITINSVILLE (MASS.)
SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873
DIAMOND FINISH

GLYCERIN

is rationed. If you are a user of glycerin as a hygroscopic agent, you should try our new

CORPOLIN

which is almost twice as effective as glycerin. It is a heavy, colorless and odorless liquid, neutral, non-volatile and non-inflammable. It is

AVAILABLE

without preference rating. Makes gums swell, exerts smoothing effect on starch paste, prevents gelatine and glue from gelatinizing.

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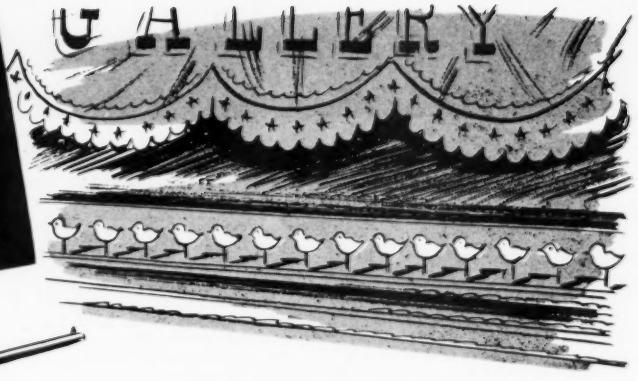
50 Union Square, New York, N.Y.

YOU CAN'T MISS

WITH 14 SAVINGS TO SHOOT AT



Here are the 14 ways in which A. P. T. Yarn Carriers can save money or improve quality in the spinning, twisting or weaving of cotton, wool, worsted, silk or rayon.

1. **Less Wear on Spindles,** because these carriers have perfect balance and thus reduce vibration. They're "built around the hole", and therefore are always concentric with the spindle.

2. **No Distortion of Carriers** from steaming or similar causes. They're impregnated for water repellency.

3. **No Splinters.** Smooth hard surface does not catch yarn.

4. **Free but Controlled Delivery.** A natural result of smooth surface, deep, well rounded corrugations and freedom from distortion.

5. **Practically No Chipping or Splitting,** because of "built up" construction,—layer on layer of tough paper glued together.

6. **No Slippage on Spindle.** Have perfect spindle cling due to resiliency.

7. **Resiliency.** Even if bent by abusive handling, these carriers will usually straighten out on the spindle.

8. **Saving in Power** in some cases due to light weight.

9. **Minimum Breakage,** due to great strength in view of light weight.

10. **Long Life,** resulting from their strength and resistance to distortion, splintering, etc.

11. **No Static,** which is often a great advantage.

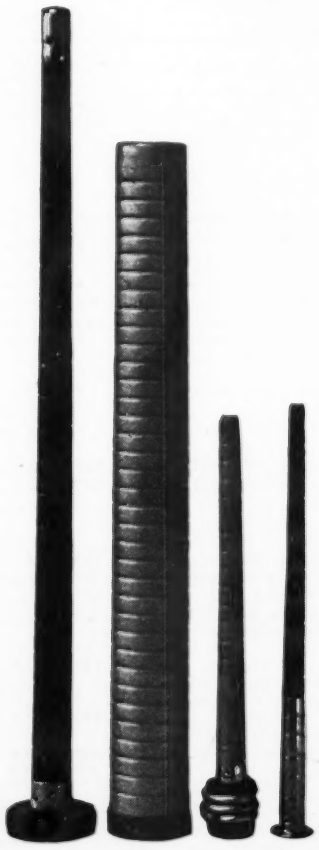
12. **Larger Capacity** in some cases due to comparatively thin wall and small diameter (if desired).

13. **Yarn Protection** due to absence of splinters or rough places.

14. **Ultimate Low Cost** due to operation economies, long life, etc.

★

TELL US YOUR PROBLEMS AND LET US MAKE SUGGESTIONS



A-P-T

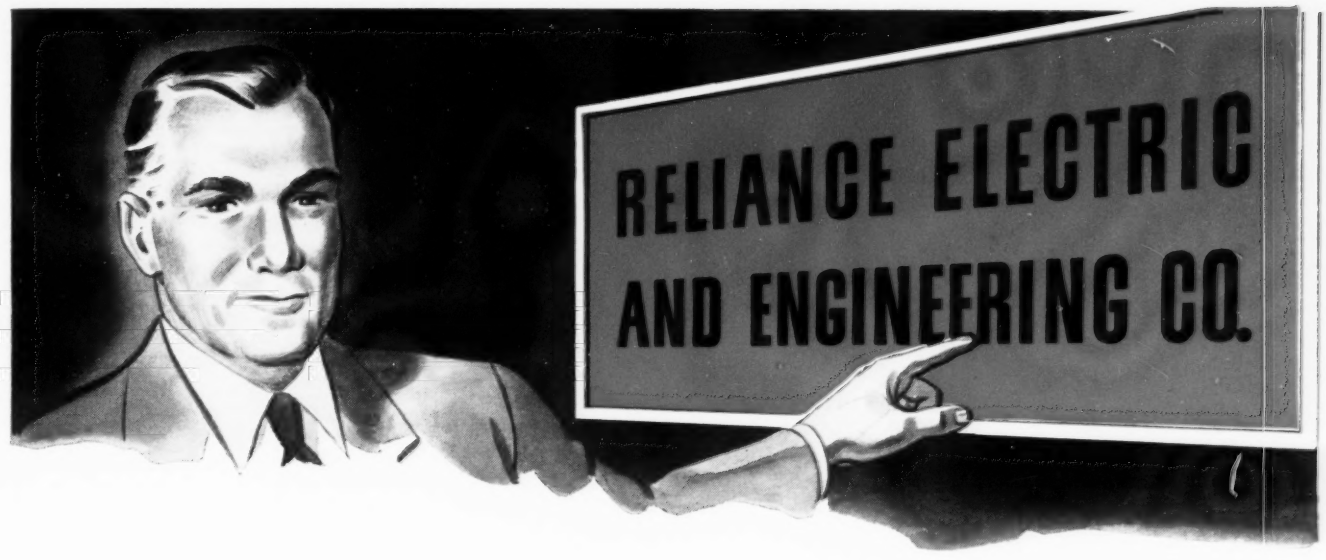
TUBES · QUILLS AND BOBBINS

They're Built Around the Hole

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898 . . . WOONSOCKET, RHODE ISLAND

SALES REPRESENTATIVES: M. Bradford Hodges, 161 Spring St., N. W., Atlanta, Ga.; W. J. Westaway Co., Ltd., Hamilton, Ont., Canada.



... I do mean "And Engineering"!

It is not enough, we think, to build top quality motors; rugged and smooth-running motors; motors of advanced design with unique protective features and low-maintenance advantages. This we do.

But, our job is not done until we have pooled our motor-building ability and engineering experience with your intimate knowledge of the operating requirements in your plant.

FOR MOTOR-DRIVE IS MORE THAN POWER. Properly applied, motor-drive can do *many things.**

Reliance Application Engineers—production minded men with broad experience in many industries—will welcome an opportunity to help you get the right answers to the question—*"What can we make the motor do besides supply power?"*

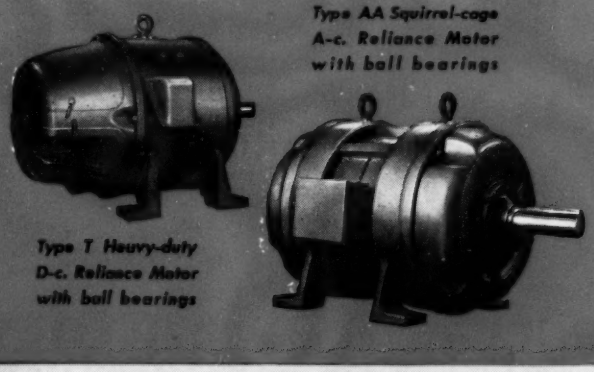
Just phone or write the Reliance office nearest you.

***Motor-drive provides within itself a means of:**

Speed Control	Reversing
Braking	Remote Control
Tandem Operation	Controlled Acceleration
Tension Control	Safety

Slow Speeds for inching, threading, inspection

Applying them to boost production and improve quality is **APPLICATION ENGINEERING.** That's our business.



RELIANCE A-C D-C MOTORS

RELIANCE ELECTRIC & ENGINEERING CO.
1088 Ivanhoe Road, Cleveland, Ohio

BIRMINGHAM • BOSTON • BUFFALO • CHICAGO • CINCINNATI • DETROIT • GREENVILLE, S. C. • HOUSTON, TEX. • LOS ANGELES • MINNEAPOLIS
NEW YORK • PHILADELPHIA • PITTSBURGH • PORTLAND, ORE. • ST. LOUIS • SAN FRANCISCO • SYRACUSE, N. Y. • AND OTHER PRINCIPAL CITIES

Actual Plant Operations Show NEOZYME Gets Results

HOW DO YOUR OPERATIONS COMPARE WITH THESE FIGURES?

At optimum temperature of 130 degrees F., one part of Neozyme will do the work of:

- 9⅕ Parts Liquid Desizing Agent A
- 9 Parts Liquid Desizing Agent B
- 7½ Parts Liquid Desizing Agent C
- 3 Parts Dry Desizing Agent D
- 4⅕ Parts Dry Desizing Agent E

These figures are based on laboratory tests which have been confirmed by plant operations

NEW ENZYMATIC AGENT INCREASES PRODUCTION

. . . CUTS COSTS

Here's a highly concentrated powdered desize that is tops in efficiency and economy. It's Neozyme — an enzymatic agent that is both *amylolytic* and *proteolytic*. It completely digests and removes starches, gums, gelatins and other sizing matter . . . insures your fabrics against faulty, uneven dyeing.

When you use Neozyme three important factors contribute to *increase* production at *lower* costs. In the first place, actual plant operations show that Neozyme cuts "lying-over" time from 3 or 4 hours to 1 hour. Secondly, it is a colorless agent . . . does away with the need for washing operations after the desizing bath. And, finally, Neozyme retains its high rate of efficiency over a long period of time . . . speeds up operations by permitting longer use of the desizing solution.

Readily soluble in water, one pound of Neozyme goes *8 to 9 times as far* as liquid desizing agents!* That's real economy. It not only saves you money . . . but it saves storage space in your plant. Free samples of Neozyme are available upon request. Or write us today for expert technical advice on your desizing problems — at no obligation to you.

*FOR THE DESIZING BATH, USE: 4 oz. to 1 lb. of Neozyme to 100 gallons of water. The amount varying with the type of machine used. Temperature: 130 degrees F.

ROYCE CHEMICAL COMPANY

CARLTON HILL, NEW JERSEY

MANUFACTURERS OF SULPHONATED OILS INCLUDING VELV-O-RAY*, CASTROLITE*, AND HYDROSULPHITES INCLUDING PAROLITE*, VATROLITE*, DISCOLITE*

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